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Editorials

CONGRESS BUSY WITH LABOR, TAXES, COMMERCE, BUT GETS MANY HEALTH BILLS, TOO

Editor's Note:—Since the following address was delivered, Senator Taft has introduced S. 545, the National Health Act of 1947, which would centralize all health activities of the federal government except those of the armed forces under a single agency to be known as the National Health Agency. The bill would establish a National Health Administrator, appointed by the President with the consent of the Senate and pay $15,000 a year, who must be a doctor of medicine and "outstanding in the field of medicine."

The new agency would take over, among other things, the Public Health Service, the maternal and child health work, and the Food and Drug Administration.

Provision is made for a comprehensive national medical care survey by individual states (for which $3,000,000 would be appropriated) in preparation for a general health program for low income groups, for which $200,000,000 is appropriated for each of the next five years.

A National Medical Care Council of eight persons is provided, four of whom must be doctors, to be paid on a $25.00 per diem basis.

Dental care is also provided.

The 80th Congress, with more than one-fifth of the members of each house new and inexperienced, is under tremendous pressure for tax reduction and labor control legislation, but is also getting a flood of bills proposing national health measures of all sorts.

That was the report brought February 9 to the A.M.A. Council on Medical Service and Public Relations by Dr. Joseph S. Lawrence, director of its Washington office, at its annual meeting in the Palmer House, Chicago.

Fewer bills had been introduced in all categories except labor at the time of the report, Dr. Lawrence said, yet his office was already watching nine Senate and eighteen House bills, in addition to three resolutions. And there are more to come, he added, including a redrafting of the Taft health bill of the last Congress.

Among those already introduced were four asking large appropriations for cancer control and research. One, by Representative Everett M. Dirksen of Pekin, Illinois (Republican), asks an appropriation of $50,000,000; the others ask $100,000,000 each, while at the same time the National Cancer Institute of the U. S. Public Health Service, which had $1,700 000 this year, is asking approximately $7,000,000 for next year.

Another bill being closely scrutinized is the anti-vivisection proposal for the District of Columbia, Dr. Lawrence said. It has been referred to the sub-committee on health of the House District of Columbia Committee, headed by Dr. Arthur L. Miller of Kimball, Neb., a graduate of Loyola Medical College, Chicago, and

representative (Republican) of Nebraska's 4th District.

Dr. Lawrence called the attention of the Council especially to S. 472, the bipartisan "Education Finance Act of 1947," to provide federal subsidies for equalizing educational opportunities among several states by appropriating $150,000,000 for distribution according to a stated formula.

The bill is not a health bill. The interest of the medical profession's representatives is based on the mechanism set up to distribute the fund, which Dr. Lawrence indicated might be adopted in any future health bills, and which leaves control of expenditures with individual states. He summed it up in these words:

"The U. S. Commissioner of Education shall certify regularly to the Secretary of the Treasury the amounts allotted under the formula of this Act to each state that has accepted the provisions of the Act, and the Secretary of the Treasury shall, through the Division of Disbursement of the Treasury Department, and prior to audit or settlement by the General Accounting Office, pay to the Treasurer of such states the amount certified for each fiscal year. Each such state treasurer shall account for the monies received and shall pay out such funds only on requisition of the State educational authority. The State shall qualify by action of its legislature, agreeing —

"1. To accept provisions of the Act and to provide for administration.

"2. That State Treasurer shall receive the funds and report to the Congress through the U. S. Commissioner of Education the amount received and its disbursement.

"3. That State Educational authority shall represent the State in the administration of funds received.

"4. To provide for an audit by the State educational authority of expenditures of funds re-

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ceived and apportioned to local jurisdiction and for a system of reports to such authority.

"5. That the State educational authority shall make reports to the Commissioner which he shall convey to the Congress with recommendations for such revisions of the Act as in his judgment the Congress should consider.

"6. That there shall be no racial discrimination in the expenditure of the funds.

"Under these conditions the state control is not impaired and there is very little opportunity to create such an enormous federal bureaucracy as we dreaded from the Wagner bill. This bill may prove to become a model for other bills providing subsidies. It is modeled after the Plan of Land Grants to Colleges enacted after the Civil War."

THE MEDICAL BENEVOLENCE FUND

In accordance with a recent action of the Council of the Illinois State Medical Society, every member will receive during the months of February and March, a letter telling of the efforts to develop a permanent endowment to maintain the work of the Committee on Medical Benevolence and pay regular stipends to disabled members of the Society, widows or widowers of former members, or their dependent children. It is the desire of the Committee as approved by the Council, to develop a fund so that all benefits may be paid from the income rather than from the fund itself, thus making it a perpetuating plan.

This was the dream for many years of the late Dr. John S. Nagel who began more than twenty years ago to create a sufficient amount of interest within the Society to make this possible. At this urgent request some seven years ago, the House of Delegates approved changes in the Constitution and By-Laws to establish a Committee on Medical Benevolence and recommended that the Council appropriate a sufficient sum of money to put the plan in operation immediately, which was done a few months later.

Some interesting conditions were met within a short period of time. Some former members with large incomes died suddenly or became disabled, and it was learned that their families were unable to care for themselves through the loss of the wage earner. The small monthly checks sent regularly by the Committee on Medical Benevolence were greatly appreciated and did help materially to keep the family intact. A few members developed a serious ailment which kept them away from their professional work over a period of months or for two or more years, and the assistance from this committee was greatly appreciated until their rehabilitation was completely established.

Several elderly physicians no longer able to practice, received similar aid and they too have been grateful indeed. Fortunately under the plan of operation, only the three members of the Committee on Medical Benevolence know who the beneficiaries are, as the names are not published or reported even to the Council. The funds and transactions of the committee are subject to the annual audit, and to date, not one cent of the Benevolence Fund has been spent for anything other than direct aid to beneficiaries.

The letter sent out in February and March is as follows:

TO: MEMBERS, ILLINOIS STATE MEDICAL SOCIETY

RE: The Benevolence Fund

My dear Doctor:

You will recall the efforts of the late Dr. John S. Nagel over a period of many years to get approval from our House of Delegates to establish a Medical benevolence Fund to make available monthly checks for needy members, widows, widowers, or dependent children of former members when actual need was established. Some seven years ago this was approved by the House of Delegates and the By-Laws were amended to make the plan possible. Doctor Nagel was elected the first chairman of the Committee on Medical Benevolence, retaining this position until his death. It was his hope that eventually a fund could be established within the Society so that the principal would not need to be used, and the income would pay all benefits. At this time there is a maximum grant of $30.00 per month to the beneficiaries, and the considerable amount of money has been appropriated by the Society to make the payments possible. Some financial aid has been received from the Woman's Auxiliary, but all other funds used have come from the general funds of the Society.

The Council recently approved a resolution presented which will give the membership as a whole the opportunity to build up this fund through two sources, both entirely voluntary.

1. This letter is being sent to all members together with a self addressed postage paid envelope and a form to be filled out showing your interest in this proposal

and listing your subscription to this fund. A contribution of any amount will be greatly appreciated.

2. Some members have frequently expressed a desire to make a bequest in their wills to the Benevolence Fund, and there is no time like the present to add such a codicil. Likewise, several outside the medical profession have expressed a willingness to donate money to this fund, and it is quite probable that many physicians can bring this matter to the attention of patients desirous of naming this Fund as a beneficiary.

This seems to be the logical time to start building up our permanent endowment, and your support to this worthy project will be greatly appreciated. After all, adversity can come to any of us, and we do not want our members or our beneficiaries dependent upon charity.

Cordially yours,
ROBERT S. BERGHOFF, M.D.
President

OSCAR HAWKINSON, M.D., Chairman
Medical Benevolence Committee

With the present day high cost of living no one knows when adversity may come to themselves or to the members of their families. No physician is desirous of depending on charity if it is possible to avoid it. The benevolence work is quite similar to life insurance, as the premium is included with the regular dues paid the county and state medical society. The member, in time of need, is legally entitled to the benefits. On the other hand, when the benevolence fund grows to such an extent that the principal will not need to be disturbed, and the income will care for all beneficiaries, it automatically becomes a permanent endowment, and that is the ultimate aim of the Committee as well as the Council, in authorizing this drive for funds.

Quite a number of members have given assurance that they will add a codicil to their wills whereby a certain sum is to be donated from their estates to the Medical Benevolence Fund. Others have reported that friends outside the medical profession would like to make similar donations, perhaps in the memory of some family physician who meant very much to them.

With the letter mailed out there was sent to each member a form to be filled out and a self addressed postage paid envelope in which the contribution could be sent. These lists of donors and the specific amounts contributed will not be publicized, and merely the amounts received and the total in the Benevolence Fund will be publicized from time to time in the annual report of the Committee to the House of Delegates.

It is hoped that every member of the Illinois State Medical Society will make a donation as early as possible so that a good report may be made at the 1947 annual meeting of the House of Delegates.

THE ILLINOIS CANCER BULLETIN

The Cancer Committee of the Illinois State Medical Society is highly gratified with the interest shown by the physicans of Illinois and elsewhere in the Illinois Cancer Bulletin. The Committee wishes now to clarify its present position and announce its future policy with regard to the Bulletin.

It was announced in the Bulletin Supplement, dated October 10, 1946, that a continuation of the Bulletin in abbreviated form was contemplated. Because of certain developments, however, the plan has not been immediately followed; nothing has been published since Oct. 10, 1946. This information is given because there have been so many inquiries from physicians as to why they have seemingly been dropped from the mailing list.

The reason for the change in plans came about because The American Cancer Society, New York, became so interested in the success of the publication that it wished to take over the publication for nationwide distribution. This was agreed to by your Committee after several conferences with representatives of The American Cancer Society, but that society finally formulated its plans along different lines. The preparation and groundwork for the American Cancer Society's project will require some little time and its initiation has been deferred until late in 1947. Hence, it has been decided that publication of The Illinois Cancer Bulletin should be resumed as originally planned, for at least one more volume of twelve numbers. Preparations are already under way, and the first number will be out soon.

With the last issue of Volume I a postcard was included for readers to indicate if they wished to be retained on the mailing list. The result was an avalanche of returned cards. The response showed so much interest that it was determined to continue using the full mailing list as before.

It should be of interest to the members of the Illinois State Medical Society to know that

twelve other states have asked to participate in the work we are carrying on and have ordered Bulletins for distribution to the physicians in their states. These are now being supplied to them, at cost, substituting their individual state mastheads for that of Illinois. Other states, and even a South American nation, are negotiating toward the same end.

Apparently the pioneer work of The Illinois Medical Society is bearing fruit in much greater abundance than was anticipated when it was undertaken.

DEATHS OF PHYSICIANS IN ILLINOIS

The average age at death of Illinois physicians in 1946 was 66.4, according to an analysis of the obituaries of 253 Illinois physicians published in The Journal of the American Medical Association.

Heart disease led the causes of death in Illinios, following the pattern established in the overall study of the obituaries of 3,358 physicians made by The Journal of the American Medical Association in its issue of January 11. In Illinois, fifty-five deaths were charged to coronary thrombosis or occlusion. Myocarditis accounted for sixteen deaths and other diseases of the heart, thirty-one. Cerebral hemorrhage and thrombosis were responsible for thirty deaths and various forms of carcinoma for twenty-three. Arteriosclerosis figured in twenty-one deaths and numerically in order appear the following: Pneumonia thirteen, of which one was virus pneumonia; uremia and nephritis, eleven; diabetes, ten; cardiovascular renal disease and malignant hypertension, eight; hypertension and tuberculosis, three each; Parkinson's disease, diseases of the gallbladder, diseases of the respiratory system, asthma and leukemia, two each. One death each was charged to pernicious anemia, tuberculous meningitis, arthritis, cirrhosis of the liver, influenza, cholecystitis, disease of the spinal cord, poliomyelitis and other thrombosis and embolism. One cause was entered as "ill-defined" and one as senility.

In this brief analysis, the various causes have been classified individually, since multiple factors were ascribed to many of these deaths.

Of the twelve accidents in the civilian group, four died in automobile accidents, three from falls, one in the Hotel La Salle fire and one from an overdose of benzedrine. Three deaths were attributed to fractures, one of the right femur and humerus and two of the hip.

There were five suicides, one of monoxide gas poisoning, one of an overdose of sleeping pills, one of a bullet wound, one of barbiturate poisoning and one for which no method was given.

Of the twelve physicians who died in the service of their country, seven were killed in action and five died while in military service. In the killed in action group, three were members of the Army of the United States and four of the Navy. In the Army, one died in the crash of a B-29 bomber, one of battle wounds and one was just listed as killed in action. In the Navy, two were listed as killed in action, one was hit by a Japanese suicide bomber and one was first reported missing in action and later officially declared dead. Of the five deaths reported while in military service, four were in army service and one in the Navy. In the Army, one died in an automobile accident, one in an airplane accident, one of hepatitis and one of carcinoma. The Navy physician died of extreme multiple injuries received in an automobile accident.

Of the military group two died between the ages of 25 and 29, four between 30-34, four between 35-39, one between 40-44 and one between 55-59.

DEATHS BY AGE GROUPS

25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94
2	8	9	7	10	6	27	27	35	40	42	22	14	4

CANCER SYMPOSIUM FOR ILLINOIS PHYSICIANS

A five day symposium on cancer with special emphasis on early diagnosis was conducted by the Illinois Division of the American Cancer Society in Chicago on January 20 to 24. The Executive Director of the Illinois Division, Dr. John A. Rogers, and Dr. Warren H. Cole, the

chairman of the Illinois State Medical Society Committee on Cancer came before the Council at a recent meeting asking the cooperation of the state society as well as its approval for the presentation of this unusual symposium.

Following the approval of the Council, letters were sent to all county medical societies asking them to recommend physicians in their respective sections of the state who would be interested in taking this course. Many applications were received, and the first 35 were selected to take this course with the understanding that if the venture were approved and the physicians thought it desirable, additional courses would be arranged for other groups of physicans.

Warren H. Cole was chairman of the Committee on Arrangements from the University of Illinois College of Medicine; Alexander Brunschwig from the University of Chicago; Walter G. Maddock from Northwestern University and Herbert E. Schmitz from Loyola University were the other members of the Committee. Sessions were held at each of these University Medical Schools on the first four days, and on the fifth day the group went to Michael Reese Hospital where an unusually fine program was arranged. Special dinner meetings were held which added materially to the interest on the part of the participating physicians.

The major portion of the expenses of those attending the symposium was borne by the American Cancer Society. If a sufficient number of applications are received from physicians in the downstate area, the course will be repeated, and plans are under way for a similar symposium for Cook County physicians in the near future. Cancer as the greatest killer among diseases, can be reasonably well controlled if the available information on early diagnosis and early treatment is utilized to the best advantage.

In view of the fact that there were 12,651 cancer deaths in Illinois in 1945 and to a considerable extent with the proper use of available information on the early diagnosis and treatment of this disease, it is hoped that many Illinois physicians will take advantage of this unusual opportunity to attend future conferences or symposia which will be arranged if there is a definite demand for them.

Guest Editorial

THE NEXT STEP FOR BENEFIT OF THE PUBLIC HEALTH

HARRY S. MUSTARD, M.D.
Director, School of Public Health, Columbia University
NEW YORK CITY

There has probably been no period in the world's history when the accumulation of scientific knowledge was as great as it is today. It seems equally safe to assert that, so far as concerns ability to apply this knowledge for the benefit of the public health, no nation is or has been in as favorable position as the United States.

Newer knowledge for the prevention of diseases and improvement of health, as well as knowledge long held, is almost staggering in its implications. As each year passes, is becomes possible to see more clearly how, as a practical matter, illness or death from this disease or that may be made an unusual event in the community. New vaccines, and the broadening field of immunochemistry, chemotherapy, antibiotics, specifics in the prevention and control of nutritional diseases, the possibilities of chemical synthesis, clarifications as to etiology and pathology of many of the chronic diseases, productive fundamental research — all these advances present new pages and fresh promises of a healthier and longer life for man as an individual and in the mass.

Many of the benefits of this newer knowledge will be brought to the people through the practicing physician in his private and hospital capacity. But not all of the knowledge available can be applied by physicians serving individually and, today's information as to what to do is to a considerable extent dammed up, and the people remain in want of it because in many parts of the United States and in many communities in the various states, there is no full-time public health department of trained workers to translate knowledge into action.

The American Public Health Association, as a result of a nation-wide study in this connection, came to the conclusion that one of the most urgent necessities for the benefit of the public is for each and all of the several states, within the framework of their respective laws and pol-

icies, to provide full-time local health organizations on a city, county, or district basis. Inherent in this recommendation is the proposal that the state should aid these local organizations financially on an equalization basis, but that each local jurisdiction should subscribe funds in proportion to its wealth or lack of it. There are also certain other qualifications that relate to such joint local-state undertakings. One is that through direct participation or representation, local autonomy be maintained and, another, that appointments to these local health departments be non-political, on the basis of merit, in accordance with pre-announced requirements as to education and experience, and that salaries be sufficient to attract competent physicians, nurses, and other professional public health workers.

But the American Public Health Association is not the only national agency that has expressed itself in this connection. A resolution similar in import was adopted by the State and Provincial Health Authorities of North America in 1944, and on June 10, 1942 (antedating by some months the action of the American Public Health Association), the House of Delegates of the American Medical Association took action as expressed in the following resolution:

"That the Trustees of the American Medical Asssociation be urged to use all appropriate resources and influences of the Association to the end that at the earliest possible date complete coverage of the nation's area and population by local, county, district or regional full time modern health services be achieved."

It will thus be seen that, so far as concerns professional organizations, there is wide agreement that for full release and application of public health knowledge to the people, a mechanism must be supplied that will carry public health service to every person in every community in each state of the nation. State health officers are also convinced of this, and the intelligent lay public is awakening.

In these circumstances, one might well ask why the plan is not put completely into operation; why knowledge that is health saving and life saving is blocked up in its flow to the people. The answer, though complex and varying from place to place is not difficult to discover. The resistance is mainly inertia on the part of those who hold the state and local purse strings. Strengthening this passive opposition to some extent, in one place or another, is a certain amount of individual resistance: fear of loss of local autonomy, fear of the loss of a job, apprehension of legislators and local officials as to costs.

But most of these things are being overcome. Representatives of the people are beginning to learn that none of their colleagues is ever subjected to criticism because of appropriations for public health purposes, but that, on the contrary, a record of affirmative action in this connection becomes something to which a candidate more and more points with pride. As to local autonomy, a community that has its own full-time health department soon comes to realize that there is far less remote control than when they had no trained workers of their own, and decisions relating to their local affairs had to be made by the state department of health.

It must be confessed that the coming of full-time health officers tends to displace those who previously acted in the same capacity on a part-time basis. Nevertheless, in most places the total number of part-time physicians employed in clinical capacities by the full-time health department usually exceeds the number previously as health officers. Thus, although the change of system might entail hardships in individual instances, the total participation of the medical profession is likely to be greater rather than less than before.

As a whole then, the problem is comparable to many other seen in human affairs wherein there is, on the one hand, a great storage of valuable goods, and on the other hand, an acute and permanent consumer need, but with transportation and communication systems more fitted to the eighteenth century than to the demands and opportunities of the twentieth. Unfortunately, insofar as concerns community health, the consuming public and its representatives and officials in many places, is not only uninformed as to the potential value of this dammed up knowledge, but is also quite unconscious of the need for establishing local health departments as a means for the tranlation of information into action.

But this public will listen to its doctors; and herein is to be found the medical profession's opportunity for a public service of inestimable value, and in keeping with its announced policies and its traditions.

ILLINOIS IN THE ROCKIES

A notice has been received in the office of the secretary of the state society relative to the opening of a new medical center — The Colorado Springs Medical Center, at Colorado Springs, Colorado. It is indeed interesting to note the personnel of this group and its background.

Dr. Robert O. Beadles, the urologist, is a graduate of the Northwestern Medical School; Dr. John E. Karabin, the surgeon, graduated at Northwestern Medical School, and took his post graduate work at Northwestern and at the University of Illinois Medical School. Dr. R. Keith Kerr, obstetrician and gynecologist, graduated at Northwestern and had his post-graduate training at Evanston Hospital, Evanston. Dr. Robert H. Smith, internist, graduated at Northwestern. Dr. J. Harvey Johnston, internist and allergist, is also a Northwestern man; Dr. James W. Lewis, radiologist, had his post-graduate work at Evanston Hospital and Dr. W. K. Kuhlman, ophthalmologist, had his post-graduate courses at Northwestern.

Chicago, undoubtedly, is one of the large medical centers of this country, and our teaching, our principles and our "products" are scattering far across this nation. It is definitely our responsibility to maintain the high standards in medical education essential to the health and welfare of our people, and to realize the far flung effects that our schools have upon the well being of our population.

WAR DEPARTMENT'S RESEARCH PLANS TOLD

A National Science Foundation to correlate and expedite federal scientific research was advocated by Maj. Gen. H. S. Aurand in a speech before the Union League Club at Chicago, Feb. 4, coupled with the warning that important research has lagged since V-J Day.

"We are in the interim period between a long and militarily successful war, and what we fervently hope will be a lasting peace," said General Aurand, Director of the Research and Development Division of the War Department General Staff. "As we emerge from war, there seems to be a tendency to look to the military to continue to decide and to act as they did in war. On the other hand, the military are most anxious to return to civilian direction."

Commenting on the part science played in the recent war, General Aurand pointed out:

"In the research and development program, the role of the scientist has been phenomenal. Such things as 'radar,' 'proximity fuse,' and 'tomic energy' are today household words. All of these were brought to the battle-field by scientists during the progress of World War II .... Time after time, when the chips were down, the scientists came through with the answers. That the War Department could fail to recognize the necessity for a greatly increased research and development program after World War II is unthinkable."

Since conclusion of the war, however, research has lagged, he emphasized. The federal scientific agencies with which the Army had dealt — the Office of Scientific Research and the National Defense Research Council — have been winding up their activities.

To meet the emergency, General Aurand proposed establishment of a National Science Foundation "at as early a date as possible."

"The performance of this task of collaboration between science and the military is not the only reason why the War Department wants the National Science Foundation," he asserted.

"There should be a clearing house for federal research contracts, in order that the War Department, which is just one of many federal agencies with a research and development program, may know whether work is already being undertaken elsewhere in a field which it desires to explore. It needs to know the best place to go for its pure research work, as well as the best qualified people to do the job it has in mind. And finally, there has to be some sort of mobilization plan for science, not only in the event of an emergency, but to carry on the necessary research work in peacetime . . . . . A National Science Foundation could do all these things with propriety."

Among the fields in which the Army is carrying on and planning extensive research are aviation, ordnance, communications, engineering, supply, chemistry, medicine, and transportation.

Emphasizing the extent of civilian participation, which he said "might also be called civilian domination," General Aurand pointed out that restrictions on contracts for research are entirely

(*Continued on page* 146)

Correspondence

U. OF I. MEDICAL ALUMNI LUNCHEON MAY 13

The Medical Alumni Association of the University of Illinois College of Medicine will hold an annual luncheon at the Palmer House on Tuesday, May 13th at 12:00 noon. President Stoddard, Doctor Ivy and Doctor Youmans will be guests. The cost per plate will be $3.50, and reservations are to be made with Dr. Michael H. Striecher, Secretary, 1853 West Polk Street, Chicago.

IOWA-ILLINOIS MEETING

The regular quarterly meeting of the Iowa and Illinois Central District Medical Association will be held Thursday March 20, 1947, in the Fort Armstrong Hotel in Rock Island, Illinois.

Dinner will be served at 6:30 P.M. in the ball room to be followed by the scientific program at 8:00 P.M.

Zackary J. Romeo, M.D. of Rock Island, Illinois, will give a short talk on "The Use of Pituitary Extracts During Labor".

The guests speaker of the evening will be Russell L. Haden of the Cleveland Clinic, Cleveland, Ohio, who will speak on "Rheumatoid Arthritis".

All physicians who are interested are invited to attend.

NAVAL AIR RESERVE TRAINING

The U. S. Naval Air Station, Glenview, Illinois, is now engaged in Naval Air Reserve training. Personnel operating the station are mainly officers and men discharged at the end of hostilities, having returned to active duty at their own request.

At this time there are two openings for Naval Reserve medical officers for active duty. The senior medical officer should be a flight surgeon.

There is also opportunity for a number of Naval Reserve flight surgeons and the other medical officers to join the Organized Reserve training program. This involves participating in four training periods per month, which can be done on one weekend, and an annual two weeks' training cruise.

Further information about these opportunities may be obtained from the Senior Medical Officer, U. S. Naval Air Station, Glenview, Illinois.

PHYSICIANS IN CIVILIAN PRACTICE DURING WAR URGED TO REPLY ON NEW QUESTIONNAIRE

Parallel with the advance of scientific warfare there has been a rapid advance in scientific medicine in the Twentieth Century. The huge strides made in our ability to destroy life and health in the recent war, however, have left many problems which remain to be solved. One of the most critical problems, as recognized by the House of Delegates of the American Medical Association in its December meeting, is that of providing care for the civilian population in the event of another national emergency.

The medical profession is wisely assuming its obligation to the American people to be prepared with facts and recommendations for any such future emergency. As a first step in this preparation, 5,000 questionnaires have gone out to a list of physicians, selected at random, who passed the recent war years in civilian practice.

On the basis of the answers to these questionnaires, sent out by the Committee on National

Emergency Service of the A.M.A., it is hoped that facts may be determined as to how the civilian population was served in World War II. The questionnaires also provide an opportunity for those who were responsible for civilian care in those years, to indicate what changes should be made in the mobilization of medical service in future emergencies.

Five thousand questionnaires represents a very small percentage of the total number of physicians who remained in civilian practice. Dr. Edward L. Bortz, Philadelphia, chairman of the Committee on National Emergency Service, has appealed to every physician receiving the civilian questionnaire to respond promptly. The accuracy of the facts obtained and the soundness of the conclusions made by the study will be determined to a great degree by the cooperation which those receiving the questionnaire give the committee.

The committee received excellent cooperation from the 50,616 former medical officers who were mailed questionnaires last December on their experience in military service. These are now being analyzed and studied. The facts obtained will be used as a basis for recommendations to be made by the Committee in June to the House of Delegates.

With the cooperation of the 5,000 physicians who are now receiving questionnaires on their civilian experience, the committee will be able to complete the total study of how the medical profession can best serve our population, civilian and military, in the event of a future national emergency.

Every physician receiving one of these questionnaires has a professional and humanitarian duty to perform in completing it and returning it promptly. It is preferred that each sign his name, but if anyone wishes to remain anonymous, he may do so. The important thing is to get as broad a representation of facts, experiences, and opinions as possible.

AMERICAN SOCIETY FOR THE STUDY OF STERILITY

The third annual convention of the American Society for the Study of Sterility will be held at the Hotel Strand, Atlantic City, New Jersey, on June 7-8, 1947. The general theme of the meetings will be that of attempting to disseminate to the physician treating marital infertility an overall picture of the latest advances in reproduction. The convention will include original papers, round table discussions, scientific exhibits and personal demonstrations. In essence, this will be a valuable post-graduate course in the subject of sterility and infertility. Registration for the sessions is open to members of the medical and allied professions. Additional information may be obtained from the secretary, Dr. John O. Haman, 490 Post Street, San Francisco, California.

MEDICAL EXAMINERS LUNCHEON MAY 13

There will be a luncheon for the diplomates of the National Board of Medical Examiners on Tuesday, May 13 at 12:30 at the Palmer House. All those wishing to attend this luncheon should communicate with Dr. W. O. Thompson, 700 N. Michigan Avenue, Chicago. There are several important matters to discuss and it is hoped that as many diplomates as possible will attend.

FREE PLACEMENT SERVICE FOR PHYSICAL THERAPISTS

The Illinois Chapter of the American Physiotherapy Assocation offers a Vocational Placement Service to facilitate the placing of qualified physical therapists in the Illinois area. Anyone desirous of securing the services of a physical therapist, either full or part time, may contact Miss Dorothy Wagner, 560 Aldine, Chicago, Illinois.

Original Articles

REMARKS ABOUT THE APPLICATION OF THE BETATRON IN CANCER THERAPY

HENRY QUASTLER, M.D.
URBANA

The betatron[2, 3] is a result of modern developments in physics, and it will, in turn, lead to additional new developments. One aspect of these anticipated developments shall be discussed here, viz., the possibilities of using the betatron, in a certain way, in cancer therapy. The final appraisal, of course, will come only after sufficient experience has been gathered in actual clinical work, and, as far as is known, the betatron has not yet been used on any patient. But, in preparation of medical work, a certain amount of experimenting and theorizing has been done at Urbana, by a group of workers representing physics, biology, and medicine. As a result, we feel that we can forecast, with some accuracy, the achievements to be expected from the clinical use of the betatron.

The invention, and a good deal of the development, of the present betatron was the work of D. W. Kerst and his associates, at the University of Illinois. The betatron is a machine to accelerate electrons by magnetic induction. The electrons are injected into a ring-shaped vacuum tube called the "doughnut". They are sped up along a circular orbit. At each turn, they gather additional momentum. As they move almost as fast as light they can be made to perform very many turns, and accumulate a very high energy, within a small fraction of a second. As soon as the electrons have reached a predetermined level of energy, they are released from their circular orbit by a change of the field. At this moment, they could be brought out of the doughnut as very energetic beta rays; or, as in the present machines, they are hurled against a metalic target, where they produce a burst of roentgen rays. The machine we used in our experiments produced roentgen rays of a peak energy of twenty million-electron-volt, at rates of around 50 r/min. at a meter.

Thus, it has become possible to use roentgen rays of many million volt energy. Such rays have a number of important properties, but the one which interests us most, at the moment, is their power of penetration. If we examine a depth dose curve obtained with the rays of the betatron[4] we see, first, that the tissue dose increases for three to four cm. below the surface. This is due to the fact that the secondary electrons produced travel far, and almost exclusively in the direction of the beam. Less startling but more important is the second feature that, once the peak dose is reached, the tissue dose falls off very slowly. Calculation shows that what decrease there is is due to distance rather than to absorption. We can arrange the beam in a way that there will be approximately the same dose throughout the region passed, from entrance to exit portal. Thus, if we arrange two beams so that they coincide only in the tumor area, no region outside the tumor area will receive more than one-half the tumor dose; with three beams, the factor will be reduced to one-third, etc. It is obvious that, this way, we can administer a

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predetermined dose to a tumor area anywhere in the human body, without giving damaging doses to any tissue outside the tumor area, and without having to use high volume doses.

On the basis of these considerations it is clear that the betatron implies a definite promise for the radiation therapeutist and his patient. However, several questions must be settled before therapy can be started in a rational way. The first problem is this: what reaction will occur in an isolated small volume of tissue, situated in the beam, independently from the dosage distribution throughout the body as a whole? Biophysical considerations (which will be given in detail elsewhere) led us to two tentative statements: (i) qualitatively, the biological and clinical reactions will be the same as those attending the use of conventional roentgen rays, and (ii) quantitatively, they will be about the same as those following administration of an identical dose of gamma-rays. These two theses, of course, apply only to a small element of tissue, not to the patient as a whole. For experimental tests, we substituted, for the body, a pressdwood, phantom of appropriate dimensions, and for the small element of tissue, a small living object (mice and bean seedlings, in the experiments done thus far) inserted at a selected place in the phantom. The results of these experiments will be discussed elsewhere in detail[5,6], in this context. I want to report only the general results: a good number of reactions were investigated qualitatively, by my associates and myself, and the changes observed were comparable, in every respect, with those found after treatment with 200k.v. rays; quantitatively, only a few tests have been done, and the factors found have been about the same as occur in the comparison of conventional roentgen rays and Radium-gamma-rays. The results of this work — though it is admittedly rather limited in scope — make us feel quite certain that no startling surprise in the way of tissue reactions will attend the clinical use of the betatron.

The situation seems to promise clinical application of the betatron in the near future: the technical development of the instrument has produced reliable and easy-to-run machines; the danger of unexpected tissue reactions has been largely eliminated; and the next steps to be taken are well perceivable. The first is the construction of a good limiting diaphragm or cone. The beam as it comes out of the doughnut shows an energy gradually decreasing from the center to the periphery in a Gaussian curve. Such a beam, of course, cannot be used clinically. The limiting will not be quite easy; it takes a considerable thickness of lead to reduce the primary radiation substantially and the secondary electrons arising in this process are rather penetrating and cannot be stopped, as in present cones, by a thin layer of bakelite. Once a good diaphragm is constructed, it will be necessary to take a complete set of depth dose curves; the ones available at present are of a preliminary nature, and there is little sense in doing careful measurements at this time, because the depth doses obtained with the unlimited beam are not quite the same as the ones that will be found with a diaphragm. Once these questions are settled, plans of treatment can be set up; one will have to go back to the basic principles of radiotherapeutic techniques to develop his methods, as it will be distinctly not favorable to apply the betatron in the same manner as a 200-k.v.-beam. However, it will probably not take long before the betatron techniques are as well standardized as the 200-k.v.-techniques are now. Finally, there is the problem of protecting the operator[1]. This is not as hard as it might seem, because high-energy rays are mostly scattered in a forward direction, and the protection is not too difficult if the beam is kept unchanged, and pointing toward a safe spot.

The research program outlined above is very modest, especially if compared with the vast physical and engineering developments of the betatron which are still going on. The quantum energy of the rays produced is going up, and it will soon be possible to release the accelerated electrons directly out of the doughnut. Are we to expect any striking medical advantages from these developments? I doubt it. The electron beam has a very attractive depth dose distribution, but it has little flexibility and will be hard to adapt to the individual case. Roentgen rays of an energy surpassing 20 million volt might lead to a still more advantageous depth dose distribution along the central beam, but their absorption is attended by an increasing production of unfocussed secondary radiation which will tend to increase the volume dose, thus increasing

the severity of systemic reactions of the patient.

We can, now, visualize fairly clearly the future place of the betatron in cancer therapy. With a beam of 20 m.e.v., or thereabouts, it must be possible to deliver a predetermined dose to a tumor area anywhere in the body in a way that there won't be anywhere outside the tumor area a local dosage level of dangerous height, and that the total volume dose recieved can be kept within safe limits. Thus our success in delivering the desired tumor dose will depend only on our accuracy of locating the tumor area, and of aiming the beam. There should not be any cases where our therapeutic plan is frustrated either by local burns, outside the tumor area, or by systemic reactions. The greatest improvement, as far as number of cases is concerned, should occur in the group of pelvic malignancies. On the other hand, even the best topographical selectivity is of little help if the tumor area is very extensive, like in wide spread malignancy, and in cases where normal organs which have to be protected are situated within the tumor area. Thus, in pelvic cancers, rectum and bladder are and will remain factors limiting the size of the tumor dose. Concluding, it can be said that from what we know about the betatron at this time, it cannot be expected that there will be any radical change in the outlook of cancer patients; but, that some cases will be saved which cannot be saved with the conventional equipment, and that in many cases the severe side-effects attending radiation therapy will disappear.

SUMMARY

1. The betatron has not yet been used on patients, but some work has been done in preparation for medical application.

2. No spectacular clinical success is expected, but

3. Some definite progress in radiation therapy is expected from the improvement in topographical selectivity made possible by the betatron.

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DISCUSSION

Dr. R. T. Pettit, Ottawa: I had an opportunity about a year ago of seeing this betatron at the power house at Urbana. Dr. Kerst was away during the war but several physicists in his department were making measurements on the machine and Dr. Quastler was there doing some work on the biological aspects of the problem. I think this instrument is as astounding as the atomic bomb. It will confront us with a whole new set of conditions, and it is going to confront the people who have to deal with it with a whole new set of conditions. It is, in particular, going to mean revising our ideas of protection. They are now using about five feet of concrete around the machine to protect the people who are doing the measurements. These people who are taking these chances certainly deserve a great deal of credit and warrant our esteem. These are the chances taken in science. Look at the background of the early days of radiology, with x-ray burns and so on. Protection of operators will have to be given a great deal of thought. I want to congratulate Dr. Quastler on this very revolutionary work.

Question: Have you determined the thickness of lead that has to be used to stop rays of five, ten, or even sixty million volt energy?

Dr. Quastler: Up to two million volts, the penetration in lead increases as the energy goes up; but, beyond this energy, it decreases again. Therefore, as pointed out by Failla, if you are protected against two-million volts rays you are protected against everything, and a few inches of lead, or a few feet of concrete, will do. Besides, secondaries are not so much scattered in all directions, like with ordinary roentgen rays. The operator keeps pretty far away, behind a thick wall of concrete, is not in the path of the beam, and is — we hope — safe.

Question: What dosage and at what time does it kill a white mouse? How much chemical change do they get at high voltage?

Dr. Quastler: Roentgen rays of high energy do kill mice. I have worked mostly with black mice (strain C-57) and found that to kill a mouse you need a dose about 30% higher than with 200 kilovolt rays, both doses measured with the Victoreen thimble. The time between irradiation and death depends on the dose delivered; a mouse of 20 gms. will die about 10 days after administration of 600 r; between 600 and 1200 r, the survival time goes down to 3⅓ days; from 1200 to 12,000 r it stays constant. With extreme doses, you can reduce the survival time to hours and minutes, but this is a different reaction, with diffuse and immediate cell destruction. We have not investigated chemical changes after irradiation; we do not expect any radiochemical phenomena specific to high energy rays except those which follow nuclear reactions. With very high energies you will find some induced radio-activity.

Question: I realize you have had limited experience with these rays, but certainly you have used different

types of radiation. Does the effect of high energy rays still depend on the number of roentgens used?

Dr. Quastler: Yes. The energy of a high energy photon is spent in many single steps, scattered widely throughout the tissue. At the beginning of the absorption process, an atom might emit a charged corpuscle of very high energy. This travels through the tissue, losing small amounts of energy from time to time. The values of these individual energy transfers depend not so much on the rays as on the material that absorbs them. Thus for every high energy transfer which is specific for the rays of the betatron you will have very many low energy transfers which occur just as well with ordinary rays. Therefore, the effects are basically the same, and are related to the number of ionizations, or roentgens.

Question: How does betatron therapy compare with cyclotron therapy?

Dr. Quastler: In cyclotron therapy the tissue is hit by heavy particles travelling at great speed. The ionizations produced are crowded very densely which can increase or decrease their effectiveness depending on what reaction you consider. The depth doses obtained with fast protons should resemble those of electrons which I mentioned before. The methods of dosage control are not yet too well developed.

Question: Are betatrons for medical work available?

Dr. Quastler: Betatrons are now produced by two manufacturers, and they are taking orders. The commercial model I know is designed for industrial purposes but it can be adapted for medical use. This will necessitate a certain amount of gadgeteering but I do not foresee any basic difficulties.

CONSERVATIVE RENAL SURGERY

LEANDER WILLIAM RIBA, M.D., F.A.C.S.

CHICAGO

We know a great deal more about kidneys and their function today than we knew several yeas ago. With this increased knowledge, tremendous strides have been made in renal surgery. Renal surgery today is more simple, more exacting and more positive in its end results than was its counterpart of a few years past. Fewer kidneys are being needlessly removed. Fewer exploratory operations upon the kidney are now necessary. The trend of thought today is, "How can I save this kidney?" rather than "How can I remove it?". It requires a great deal more knowledge and patience and experience to save a kidney than to remove one. We are sometimes inclined to avoid a conservative operation upon the kidney because we are afraid of a postoperative failure necessitating a second operation. These failures occur and must be admitted. In some instances, the morbidity is also greatly increased. In spite of failures and in contrast with them, a surgeon will be rewarded by many satisfactory postoperative results when a conservative operation upon the kidney has been performed.

We should always have in mind the conservation of renal tissues, but this is particularly important when we are operating upon children or young adults. In this group regeneration of kidney tissue is much more certain than in the aged. Re-operation in the young should be avoided, but it is less serious than in the aged group. In the aged group one operation, if possible, should cure the patient.

LESIONS USUALLY TREATED BY NEPHRECTOMY

Renal tuberculosis or kidney tumors, according to our present understanding, do not lend themselves to conservative surgery and the removal of the entire kidney is necessary. In the case of a functionless destroyed kidney or one for which the blood supply is defective and surgery is indicated, removal is mandatory. Severe trauma or rupture of the kidney may necessitate nephrectomy, especially when the pedicle is injured. Advanced unilateral cystic disease of the kidney when producing symptoms usually does not lend itself to conservative correction. Occasionally a polycystic kidney needs to be removed for persistent hemorrhage or malignancy. Unilateral kidney dysfunction resulting in hypertension should be treated by nephrectomy providing the remaining kidney is normal.

LESIONS FOR WHICH CONSERVATIVE SURGERY IS RECOMMENDED

1. *Hydronephrosis with uretero-pelvic obstruction.* Many of these lesions are found in children and young adults. Even though the lesion is far advanced, reconstruction of the renal outlet with or without pelvic resection may save the kidney. The prognosis is much better in the uninfected cases. The lesions are frequently bilateral with both kidneys partially obstructed, one as a rule more than the other. Even though the opposite pyelogram is normal, we have no assurance in this congenital group that a similar incipient uretero-pelvic stricture or lower pole

From the Division of Surgery, Department of Urology, Northwestern Medical School and Passavant Memorial Hospital, Chicago, Illinois.

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aberrant vessel or a periureteral adhesion is not already present. If so, it will probably cause serious trouble in years to come.

It should be noted here that following reconstruction or plastic operation upon a well advanced hydronephrosis, the collecting portion of the kidney rarely returns to a condition such as to permit one to obtain a normal pyelogram. Even with adequate postoperative urinary drainage, a certain amount of pyelectasis will persist. The function of such a kidney, however, will continue to improve for years, particularly in a child or a young adult. As stated before, in the aged patient with a normal opposite kidney, conservative renal surgery should be discouraged. With a well advanced hydronephrosis, a nephrectomy is more often the operation of choice.

2. *Renal Calculi.* We are still removing too many kidneys for renal calculi. Here again the lesion may occur in both kidneys, necessitating extreme conservation in keeping with good surgical judgment. Too frequently we do not find the calculi in the kidney at the operating table and the kidney is removed. At other times, calculi are left behind, making a subsequent operation imperative.

Every patient who is to be operated upon for a urinary calculus should have a preliminary scout film made immediately before going to surgery. This film may greatly simplify the operation and make it possible for the surgeon to avoid excessive surgical trauma and embarrassment at the operating table. After the kidney has been mobilized it is very simple to take a film of the exposed kidney with a portable x-ray unit. A 4 x 6 film wrapped in black paper and placed in a sterile rubber envelope will reveal many cases of residual calculi. With this technique the incidence of recurrent renal calculi can be greatly reduced.

Stones locked in the minor calies by a tight infundibulum are removed with extreme difficulty and with excessive trauma through the renal pelvis. They can be removed more easily by a nephrotomy incision. However, they have a tendency to recur. In such an operation we leave a dilated calyx and a poorly draining infundibulum behind, a perfect anlage for a recurrent stone. In these cases the conservative operation consists of resecting a small portion of the lower or upper pole so as to include the dilated calyx and the stone or stones, as the case may be. Even though a kidney is filled with stones, considerable parenchyma may still be present. Hemorrhage following extensive renal incisions is better controlled now by careful deep sutures and ribbon gut pressure. The newer products, fibrofoam, gelatin-foam or oxidized gauze will greatly aid us in the management of these cases in the future.

3. *Anomalous kidneys.* In duplication of the ureter and pelvis, where one pole is diseased and destroyed, every effort should be made to save the uninvolved portion of the kidney when the blood supply permits. It is difficult to say if and when the patient may be in dire need of this small kidney remnant to help sustain life. The operation can be unusually difficult, due to a longstanding infection. It is surprising how many of these duplications can be successfully treated by heminephrectomy.

4. *Solitary Cysts.* Unipolar solitary cysts can usually be resected without removing the entire kidney. Cysts occurring in the central portion of the kidney may also be resected. More frequently, however, a nephrectomy is advisable after the kidney is carefully examined at the time of operation. The remaining blood supply may preclude local excision.

5. *Nephroptosis and Nephralgia.* A greater mistake cannot be made in surgery than to perform a nephropexy upon a patient for a mistaken diagnosis. These patients are always worse after the surgery and they may become permanent invalids. A simple movable kidney remains symptomless. On the other hand, in many instances a painful kidney may be successfully treated surgically, providing the pain is renal in origin. In these cases there is, in addition to the ptosis, an obstruction of the upper ureter or there is sufficient rotation to cause passive hyperemia of the kidney. This passive congestion may produce an extremely sensitive and painful condition of the kidney without urinary obstruction or urinary retention. Nephropexies should be performed without decapsulation. Renal sympathectomy at the time of the nephropexy will result in a much less painful post-operative convalesence.

6. *Single kidneys.* Occasionally we see a single kidney where surgery is indicated. The same surgical lesions found in patients with two kidneys may occur in a patient with a single

kidney. Needless to say, under these circumstances we should be most cautious and careful in our recommendations. The attitude of the patient in this group is extremely important. If a patient is not anxious to have an operation performed upon the single kidney, it would be wise to wait. As a rule, baring accidents, if the patient is anxious to have the operation and the surgery is reasonably well carried out, the outlook is quite good.

The handling of a kidney during an operation will cause a certain amount of trauma and post-operative swelling. The swelling may produce sufficient pressure on the renal parenchyma to cause anuria. An incision of the renal capsule from pole to pole on the convex lateral border will allow for post-operative swelling to take place. In the high-lying kidney, the removal of the twelfth rib will greatly facilitate renal exposure and thereby minimize the operative trauma. Tumors involving single kidneys should, of course, be resected as early as possible. A plastic operation upon the renal pelvis and ureter in a single kidney is always a serious undertaking. With minimal surgical trauma the convalescence may be entirely satisfactory.

7. *Two-stage Nephrectomy.* A discussion of conservative renal surgery is not complete without a consideration of the two-stage kidney operation. The two-stage operation has saved many a patient's life. It may be employed in large renal tumors, in perinephric abscesses, and in severe pyonephroses. There is considerable shock in connection with the removal of a kidney. Hemorrhage at the time of operation may be extensive. There can be no reflection upon a surgeon who resorts to a two-stage kidney operation or to a two-stage nephrectomy in order to safeguard a patient's life.

A careful history and physical examination of every patient with a condition of the kidney, for which surgery is contemplated, is essential. Intravenous or retrograde pyelograms or both should be made before operation. Urography should include routine prone and upright films. Sometimes a lateral or semi-lateral exposure is very helpful. A preoperative chest film may reveal additional lesions but a normal film can be helpful when post-operative complications develop.

The use of sulfonamides, penicillin and streptomycin minimize the hazards when operating upon infected urinary organs, including the kidney. Pre- and post-operative administration of the proper chemotherapeutic agent permits the performance of conservative operations upon the kidney which were impossible only a few years ago. In a few instances of localized renal or perirenal suppuration chemotherapy may cause resolution without surgical drainage.

SUMMARY

The trend in renal surgery today is definitely conservative. Many ailing kidneys routinely removed in the past are now being restored to satisfactory function. Detailed pre-operative studies, better x-ray films, and the proper use of chemotherapy are primarily responsible for the marked improvement in present day renal surgery. In addition, the young surgeon of today is infinitely better trained to perform reconstructive surgery than was his predecessor.

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THE RELATION OF THE NEAR POINT CONVERGENCE TO SQUINT SURGERY

PAUL V. CARELLI, M.D.

CHICAGO

The N.P.C. measures the convergence faculty, that is the ability of the eyes to turn in simultaneously. By itself, the near point will indicate one of two things: an overstimulated convergence center or an underactive convergence center. With the screen test in the distance and at near, it shows the differential diagnosis between a divergence and convergence anomaly. Therefore, the near point with just the measurements taken at six meters and 25 cm. will give the center anomaly at hand. It is most valuable when the deviation is the same both at infinity and at near for in this case it establishes the diagnosis.

Before proceeding any further, perhaps it

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would be a good idea to review what is included in a proper muscle examination.

1. Accurate squint history
2. Static visual acuity
   a. Without glasses
   b. With glasses
   c. With pin hole in case of poor vision
3. Static refraction
4. Muscle balance
   a. Screen test
      at 6 M — with and without glasses
      at 25 cm — with and without glasses
   b. N.P.C. — with and without glasses
   c. Cover test — with and without glasses
   d. Determination of preferred eye and fusion in eyes front if the case is one of alternating squint
   e. Motility test
      (a) excursion in all fields
5. Diagnostic positions of gaze to determine primary anomalies, secondary deviations, secondary contractures.
6. Screen comitance test.
   Same as motility test, only it is done with the screen and the covered eye is observed while the other is taken through the excursions.
7. Vergence test (Phorias only)
   a. Prism convergence
      at 6 M
      at 25 cm
   b. Prism Divergence
      at 6 M
      at 25 cm

After doing a complete muscle balance test, there should be no question in the examiner's mind as to what is the primary anomaly and what is to be done for it.

In lateral surgery, the operation always depends on the near point of convergence and the fixing eye. In a primary divergence insufficiency, that is an increasing esotropia in the distance with a normal N.P.C., surgery should always be done on the externi. In these cases, binocular surgery gives the best results since squints are always binocular affairs and center anomalies affect both diverging and converging muscles.

In primary convergence excesses, that is, an esotropia that increases at near with a close near point several factors have to be taken into consideration. There are a few types of convergence excesses. An accommodative convergence excess calls for caution if medial surgery is being considered. In such a patient, glasses and atropine should be given a trial. It will be found that the eyes will relax at near, although neither the distance or near measurements will vary. Bilateral resections should be tried before doing a small recession of the stronger internus.

A non accommodative convergence excess with a very close near point of 30 mm or less, can be treated with a recession of the stronger medial as long as these recessions do not exceed three mm.

Secondary anomalies are treated in the same way.

The great importance of the convergence near point is that not only will it measure the patient's convergence ability, but it also points out the stronger and weaker medial rectus. The eye that first turns out on reaching the breaking point is without doubt the weaker internus. This should always be considered before attempting medial surgery. Recessions should always be done in the stronger muscle, even if it happens to be the fixing eye.

If these simple rules are followed, little trouble will be encountered in the practice of surgery in the lateral deviations.

In the cases of hypertropies combined with lateral squints, the same procedure is followed. In great hypertropias, a vertical prism is held over the eyes in order to take the near point and of course lateral surgery is performed simultaneously with the vertical operation.

If care is taken to observe and measure the convergence near point of all squinters, it is doubtful that in later years the patient will return with an over correction or very unstable fusion.

It is advantageous to remember that a lagging accommodation will weaken the convergence center and this is of great importance in the treatment of the presbyopic patient.

A good near point, the normal varies from 70-80 mm is always desirable and it should be weakened as little as possible.

SUMMARY

1. The Near Point Convergence indicates an overstimulated or underactive convergence center.

2. Accurate muscle balance tests are essential in all squints.

3. The N.P.C. points out the stronger and weaker medial muscle, which must be determined before deciding upon medial surgery.

4. Surgical failures will be minimized if the N.P.C. of all squinters is measured preoperatively.

DISCUSSION

Dr. William W. Moncreiff, Chicago: There are certain important points which the essayist has ignored or has failed to emphasize. First, granting the importance of the near point of convergence, it is only one of many important factors to be studied and evaluated in the examination of a patient with strabismus, and particularly in planning an operative procedure or procedures. Several of these factors have been omitted from the author's resume of a "proper muscle examination." Hence such remarks as the following. (1) "If these simple rules are followed, little trouble will be encountered in the practice of surgery in the lateral deviations," and (2) "If care is taken to observe and measure the convergence near point of all squinters, it is doubtful that in later years the patient will return with overcorrection, or very unstable fusion," — are decidedly overstatements.

Second, the most important condition which can be discovered by examination of the near point of convergence is convergence palsy. This is most important in planning surgical procedures in convergent squint, in which the palsy, when present, is usually a secondary convergence palsy (of disuse) associated with an amblyopic eye. (Primary convergence palsy is rare in convergent squint.) It is well known that during adolescence or later, a secondary divergent squint may ensue from a primary convergent squint with secondary convergence palsy, even without any operative procedure. Any surgery which may be done during the convergent stage in such cases should obviously be limited to the externi. The author speaks of divergence insufficiency, and convergence excess of various types, but omits any reference to convergence palsy.

Time is too short to permit an extensive discussion, or even cataloging, of important factors which belong in the study of a squint patient, the planning of operative procedures, and prognosis, but the following may be mentioned in passing: The variety or kind of squint, from numerous standpoints; the stage of squint, with particular reference to its duration and the patient's age; the degree of exophthalmos or enophthalmos; the angle gamma (or kappa); anomalies and asymmetries of the interpupillary distance; the presence and grade of secondary positive and negative correspondences; the extent of the dynamic component in so-called accommodative squint; eccentric fixation of an amblyopic eye; the presence and distribution of symmetrizing and asymmetrizing factors of a variety of kinds, particularly with reference to the planning of bilateral operations. Most of these points have been omitted or very lightly touched upon by the essayist.

Dr. Carelli seems convinced that the position of the near point of convergence indicates by itself the tonicity or activity of the convergence "center." This is at best an inference which may not be warranted in all cases, and is a more or less academic point since we cannot operate on the convergence center, or otherwise influence it directly. A more practical point of view is to study the various conditions related to the convergence function for clues to explain the anomalies found.

Again, while not wishing to detract in any way from the importance of the near point of convergence as a factor in planning operative procedures for squint, one should bear in mind that neither this nor any other single item of evidence can provide a short cut to the proper evaluation of any given case of strabismus.

Dr. Paul V. Carelli, Chicago (closing): I wish to thank Dr. Moncreiff for his wonderful discussion. It is true we did not consider all the factors concerned. The paper was limited to discussion of the near point of convergence, and I think we brought out the importance of that point. We have seen cases operated upon in which the near point of convergence was never taken and as a result further surgery was necessary. This is really more of an inspirational paper. Having taken Dr. White's course at Northwestern, I was interested in the subject of squint. I am glad that the paper of Dr. Gailey and Dr. Morgan will also deal with this subject. Muscle surgery is one of the least known subjects with which we are concerned, and I think if we had a definite routine to follow we would see less and less cases operated on, that have to come back for further surgery.

Tuberculosis appears to be widely disseminated throughout all areas which have been to any degree subject to the influence of civilization. The only countries which can be said with any certainty to have tuberculosis death rates of less than 50 per 100,000 in the prewar period are Denmark and the Netherlands in Europe, the United States, and Australia. If the rates for the while population only are considered, New Zealand and the Union of South Africa may be added to this list.

Tuberculosis control is a problem of world-wide importance. The prewar distribution of this disease is alarming, and it is certain that the problem will be intensified during the postwar years, particularly in Europe. Sarah E. Yelton, Pub. Health Rep., August 2, 1946.

A PLAN OF COOPERATION BETWEEN COUNTY HEALTH DEPARTMENTS AND TUBERCULOSIS SANATORIUM BOARDS

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JAMES W. CHAPMAN, M.D.**

There has occurred in some Illinois counties where the sanatorium Law and the Searcy Clabaugh law are both in effect, some confusion of thought regarding who is responsible for tuberculosis control. The Sanatorium Law states that it is the obligation of the Sanatorium Board "To do all things in and about the treatment and care of persons so afflicted".

The Sanatorium Law is in effect in over eighty counties in the State, while the Searcy Clabaugh Law is only effective in a few. The Sanatorium Law is thirty-one years old. The Health Department Law was passed in 1943. As time passes more counties will pass the Health Department Law. In the Counties where the Sanatorium Law has been in effect for some years, the passage of the Searcy Clabaugh Law should be the occasion for an adjustment of the Anti-Tuberculosis Program to incorporate the combined forces of the Sanatorium Board and the Health Department against tuberculosis. In Counties where the Sanatorium Board has set up a Sanatorium or clinic, the Medical Director has been up to the present, the only Tuberculosis Control Officer. His duties have been mainly concerned with the treatment of tuberculosis. He has no quarantine power or any authority over the control of patients in the community other than that power he can exercise in an educational manner with his patients. With the passage of the Searcy Clabaugh Law in Counties where there is a Sanatorium Board, the assistance of the Health Department should be welcomed as an effective means of establishing a team of workers against tuberculosis. The Sanatorium Board is concerned mainly with treatment of the Disease, the Health Department with the public control of the disease.

There should be no confusion regarding the duties of the Tuberculosis Specialist and the Health Officer.

The statement has been made several times by individuals, who had become disturbed by the lack of harmony between the health agencies that the "Glackin Act is outmoted". The Glackin Law is not outmoted. The Glackin Law in some Communities is not properly interpreted nor administered.

The Glackin Act or the Sanatorium Law is the only law in the State of Illinois that has provided help for those ill with tubercuosis. In those Communities where there is an intelligent, well informed Sanatorium Board and a qualified Medical Director, the Sanatorium Law is a blessing to the Community. Those that say the law is outmoded offer no solution for the care of the tuberculosis sick. The Sanatorium Law has been and is very effective in some of our Counties. In those Counties where the law is in effect but the tuberculosis program is not effective, there should be some way to suggest the Sanatorium Board the program to persue. This could best be done through the Division of Tuberculosis Control of the State Health Department.

In DuPage County, it is believed that the Glackin Act is an effective act. The Sanatorium Board has set up a clinic as a center for the administration of its program. In this clinic, the following services have been offered.

1. Sanatorium care for the active case. No public sanatorium is operated. Available beds in four sanatoriums are used and paid for by the week.
2. Diagnostic service to the family physician in suspected cases of tuberculosis. This includes consultation, x-ray and other procedures where indicated.
3. Field nursing service in case families.
4. Out patient service for lung collapse treatments. Checking of patients and contacts.
5. Rehabilitation of the patient as a useful citizen.

This work has been in effect since 1939.

The local Tuberculosis Association has conducted the case finding surveys in the Community, in schools, colleges and industry. The Sanatorium Board Clinic has x-rayed the positive reactors. This program has been rather complete and has had interested public support.

With the event of the passing of the Searcy Clabaugh Law establishing a full time Health Department, it was felt that the two departments could work together increasing the efficiency of the Tuberculosis Control Program. The office of field nurse for the Sanatorium Board was abolished. The County Health Department

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nurses take their turns in rotation assisting the Tuberculosis Medical Director each morning in the chest clinic. They help with pneumothorax treatments, assist with examinations and hear the advice given. Thus they are indoctrinated in the field of modern tuberculosis treatment and control. The case load of the Sanatorium Board is divided among the health department nurses. They supervise the case families in their own districts.

The Sanatorium Board Medical Director confines himself to the diagnosis and treatment of tuberculosis, the supervision of patients and contacts and the rehabilitation of patients.

In the field of epidemiology, the Health Officer will be the case finding agent. He will work with the Tuberculosis Association in the case finding programs in schools, colleges and industry. When a case is discovered, it will be referred to the Sanatorium Board Medical Director for disposition.

The vacancy created by the elimination of a specialized tuberculosis nurse in the Sanatorium Board office has been filled by a Case Supervisor. This person is a medical social worker who works with the Sanatorium or home patient with their personal problems, directs occupational therapy and conducts rehabilitation studies where indicated and with the cooperation of the State Division of Rehabilitation assists patients in their rehabilitation. This part of the program is very important in building the morale of the patient and speeding their recovery.

Case records are kept in the Sanatorium Board office as that is the center of case supervision. Health Department nurses have case folders in their office on the patients in their districts containing a minimum of essential data. This data is mainly concerned with the status of the patient's case and periodic check ups on contacts, home conditions, etc. A tickler file kept in the Sanatorium Board office is the record of dates for periodic examinations. Routine appointment slips are sent out from the Sanatorium Board Office. The details of cooperation between the two departments can be worked out as the work progresses. It is evident that with such a plan communication between departments is more complicated than when the cases are followed by a specialized nurse. However the advantages under this plan are:

1. Elimination of duplication of nursing visits.
2. The public health nurse's interest and education in tuberculosis is stimulated by her contact with the clinic.
3. There are many nurses all thinking about and doing tuberculosis work instead of one.

This division of duties between the Tuberculosis Specialist and the Health Officer does not conflict but makes for a better all around program. The Tuberculosis Specialist is not a Health Officer. The Health Officer is not an authority on Tuberculosis. Each has enough work in his own field and should welcome such a division of duties.

THE BRAIN IN INFANTILE CEREBRAL PALSY

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The nomenclature of the syndromes affecting the motoric system in infants and children seems to be rather confusing. A number of different terms referring to identical or related conditions are used by various authors and textbooks; on the other hand, the same denomination is not always applied for an identical clinical picture. What is called in this paper infantile cerebral palsy, is also designated as "Little's disease", as cerebral diplegia, cerebral spastic rigidity, cerebral infantile paralysis, congenital diplegia, congenital spastic paraplegia, and as hereditary spastic diplegia. Some of these terms, evidently, point to the distribution of the palsy — diplegia in contrast to paraplegia — and others to the onset — like congenital — or to the etiology — like hereditary. Of all these denominations only the term Little's disease seems to have a more specific meaning, as it refers to a palsy, which has developed from a birth trauma — that is, the term means a certain etiology rather than a clinical entity or syndrome.

Infantile cerebral palsy is an appropriate and rather noncomittal descriptive name for this

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group of motoric disorders, which are caused by damage to the cerebrum and which have started in childhood. It refers to a condition and not to a disease. This definition excludes from the classification as infantile cerebral palsy all progressive brain diseases which cause a palsy, such as familial amaurotic idiocy or Schilder's disease, and furthermore the progressive hydrocephalus with paresis of the extremities, developing as a corollary to the increase of intercranial pressure. It also excludes juvenile general paresis and chronic encephalitis.

On the other hand, the term "palsy" is used in a rather loose way, that is, not only for an actual paresis, but also for extrapyramidal motoric disorders, such as athetosis, chorea or Parkinsonism, the athetosis being the one most frequently encountered in children.

The adjective "cerebral" excludes all palsies originating from the spinal cord or from injuries to the peripheral nerves, and such which are connected with a primary muscular disease. It excludes also those originating from the cerebellum. "Infantile" means an onset in infancy or a congenital condition. It is a common clinical feature of many, if not all, cases of infantile palsy, that the affected limb or limbs exhibit retardation in growth.

One may, of course, specify the diagnosis of infantile cerebral palsy by additions, such as hemiplegia, or paraplegic type, or athetotic. However, it seems to be useful to have a common general term covering all these conditions, which are rather uniform clinically, but are diversified in pathological anatomy and in etiology.

The material which I am going to demonstrate and to discuss will prove very definitely the truth of this last statement about the variety of pathology and the manifold etiological factors connected with the neurological syndrome of infantile cerebral palsy. It was collected during the four years when I had the opportunity to work as a pathologist in the Lincoln State School and Colony. During this time I performed 156 complete postmortems upon inmates. Among these cases were 27 classifying as Infantile cerebral palsy. 22 of them were bilateral and mostly both sides of the body were affected rather equally. 5 cases exhibited a unilateral or markedly asymmetrical bilateral palsy. Practically, all cases were spastic; none of the many athetotic inmates of Lincoln State School and Colony came to autopsy.

The prevalence of the bilateral cases in this series is evident. However, it should not be forgotten that the material comes from an institution for the feebleminded, where paraplegics and tetraplegics accumulate and also those who exhibit besides the palsy, epilepsy and mental retardation, these two deleterious complications of an infantile palsy. Hemiplegic children, especially those without fits and without marked oligophrenia, frequently can stay outside of institutions. Therefore, my material represents a choice of bad cases. But the pathology of the bad cases and of the less affected cases is basically identical.

The brain pathology of the diplegic and tetraplegic cases is more diversified than that of the hemiplegic group. Malformations of the brain are almost always bilateral and symmetrical; therefore the clinical picture of patients with a malformed brain is that of a diplegia and mostly that of a general spasticity. Destructive processes, as contrasted to malformations, are found in bilateral palsies as well as in hemiplegics; they are the only ones occurring in the hemiplegic forms.

Five of the 22 brains taken from patients with di- or tetraplegia were malformed. Eleven of them had gross destructions and in five no satisfacory anatomical basis was found for the palsy. Four of the five cases of hemiplegia exhibited destructions; one did not show any satisfactory pathology.

All malformed brains were microgyric, and all these microgyric brains were small. Some were definitely micrencephalic. The gross appearance of a microgyric brain is very characteristic. Frequently the normal gyral pattern is fairly well recognizable; however. it is distorted and obscured by innumerable small and very small irregular sulci, which divide the cortex into a puzzle and a maze of dwarfish convolutions. The gyri are not only small, but there are also too many of them. Therefore the term micropolygyria is more appropriate for this condition than microgyria. Sections through such a brain reveal that the cortex is uneven in width. The gray layer does not spread parallel to the surface, but forms irregular strands and nodes,

which often penetrate deep into the white matter. An apparently homogenous gray mass may be divided up by irregular strands of myelinated fibers offering a picture of the so-called internal microgyria. In such a malformed cortex the nerve cells appear normal or, sometimes, they exhibit the characteristics of embryonal elements.

Usually both hemispheres are equally affected. I found one brain with micropolygyria, in which one hemisphere was essentially smaller than the other one. Clinically, the spasticity was more marked on one side. Other form of malformations seem to be rather rare. Pachygyria, agyria, or large heterotopias occur occasionally in bilateral cerebral palsies.

None of these malformed brains has any trace of a destructive or of an inflammatory process. In all these cases one is dealing with a disturbance of the normal development, which goes back to an early stage of the embryonal life. Whether it is endogenous or exogenous, cannot be decided.

The second group of brains taken from children with infantile cerebral palsy show an entirely different pathology. They exhibit residues of destructive processes, which, by a general term, can be designated as scars.

Scar formation in the brain is a rather complicated process due to the fact that the central nervous system contains two different types of interstitial tissue, glia and mesenchyma. It is even more complicated in a child's brain than in that of an adult. Destruction or necrosis of nervous parenchyma results in a softening. In a child's brain, in which myelinization is incomplete, the debris is cleared away quickly, as it contains a rather small amount of lipoids. A cavity may develop, which is lined by a small layer of glia. Such a cavity, called porus, may increase in size together with a growing brain. If it is connected with the ventricular system, the pressure of the cerebral spinal fluid will not only prevent it from shrinking, but will promote its extension. This porus formation is specific for the brain of children.

Several descriptive terms are used for the designation of residual conditions resulting from destructive processes. The word ulegyria refers to the formation of small, narrow, and shrunken gyri, in which the nervous parenchyma is replaced by glia and proliferated mesenchyma. Such gyri are white and hard. They are designated also as secondary microgyria. They are basically different from the malformative microgyria described above.

The term "lobar sclerosis" is used for scar formation affecting a large area, approximately that of a lobe. It is a misnomer insofar, as the damage usually does not affect just a lobe, but rather the supply area of a larger artery or another portion of the brain which is not identical with a lobe. The gyri in such a lobar sclerosis are usually ulegyric, that is narrow, white, and hard.

Porencephaly refers to the formation of cavities, which may be single or multiple, small or large, and which may or may not communicate with the ventricles. Usually a porus is separated from the piaarchnoida by a small layer of glia, the residue of the upper layers of the cortex.

It must be kept in mind that the conditions enumerated here are basically identical, although the gross appearance may be different. The microscope proves easily that we always are dealing with the residues of a destruction, and that nervous parenchyma was replaced by proliferating glia and mesenchyma. Whether a circumscribed ulegyria, a lobar sclerosis, or, a porencephaly develops, depends upon the extent of the destruction, and furthermore probably upon the time when this destruction occurs. A porus will be formed more easily in a brain with less advanced myelinization, than in one which has already accumulated a large amount of lipoids. It is evident that the clinical symptoms in a bilateral destruction will be those of a paraplegia or tetraplegia. Theoretically one would expect that the scars seldom will be symmetrical in both hemispheres and that, therefore, the clinical examination should reveal differences between left and right. Actually, at least among the inmates of an institution for the feeble-minded, the spasticity is frequently so intense that it appears equal in both sides. In addition to that almost symmetrical scars are found rather frequently at the autopsy.

I want to mention here a peculiar condition, which is found in the brain of patients suffering from bilateral athetosis. In such cases the basal ganglia may exhibit the status marmoratus of Vogt, a marble like pattern of white and gray substance, which is produced by irregular proliferation of myelinated fibers. This is probably

a kind of reactive growth and is connected with some destructive process.

The hemiplegic type of infantile cerebral palsy exhibits an ulegyria, a lobar sclerosis, or, a porus in one of the cerebral hemispheres. The affected one may be markedly shrunken and the brain shows a cerebral hemiatrophy. This term is rather loosely used and is applied to a variety of pathological findings. It should be restricted to rare cases, in which the affected hemisphere is shrunken, but, otherwise, appears normal in its gyral pattern. Cases of this kind form a small, but typical group and have been described as examples of cerebral hemiplegia with intact pyramidal tract.

There are many etiological factors leading to scar formation in the brain of children with infantile palsy. Infections, toxic influences, and trauma are those which have to be considered in the first place.

Infectious diseases may be transferred from the pregnant mother to the fetus and may do harm to the brain. Alpers and Patten, who did considerable work upon infantile cerebral palsy and its causes, enumerate many infectious agents which have been transmitted. Recent experiences point to the importance of toxoplasmosis as an intra-uterine infection which spreads to the central nervous system. It seems that rubella of the pregnant mother may affect the brain of the fetus.

However, I found hardly any case in my material which exhibited any indication of a previous infection. It seems to me that there is a difference between those children who have to be sent to an institution and those who can stay at home in spite of the palsy. It is a common experience that children may develop a stroke with consequent palsy in the course of an infectious disease, such as measles, scarlet fever, sore throat, or others; apparently the majority of them does not need institutionalization.

Among the toxic factors, two should be menioned, namely anoxemia and the severe icterus of the newborn. Windle and his associates have proved experimentally that anoxemia may cause severe damage to the nervous system. It can be assumed that it plays an important role in human pathology too.

Severe icterus of the newborn is one of the manifestations of erythroblastosis and is due to isoimmunization of a Rh negative mother who is pregnant from an Rh positive father. The child may survive the jaundice and may develop an organic syndrome, as a consequence of the so-called kernicterus of the basal ganglia. Recent investigations by Cook and Yannet suggest that the role of the Rh factor in the etiology of feeblemindedness is an imporant one. This might be true also for infantile cerebral palsy.

Trauma, in connection with cerebral infantile palsy, means practically always birth trauma. There is an immense literature on the birth injuries found upon the brains of stillbirths and neonatals. It is commonly assumed that they are the basis for an infantile cerebral palsy. However, Alpers states rightfully that the incidence of remote sequelae as the result of cerebral birth injury is most difficult to estimate; apparently no serious study dealing with this problem has been undertaken.

Undoubtedly the clinical history in many cases of infantile cerebral palsy suggests birth trauma. Report of an early onset of the palsy, of long and difficult labor, of the use of instruments are frequent. It is quite significant that three out of my 27 cases are twins, twindelivery, as well known, always being a danger for the newborn.

On the other hand, there is a certain difference between the findings upon the brains of stillbirths and neonatal deaths and those of infantile cerebral palsy. In the first group hemorrhages are found very frequently. In the latter, residues of hemorrhages, that is, blood pigment, is seldom found. It seems to me that the birth injury which is survived by an infant and which leads to palsy, is rather a contusion or a laceration than a hemorrhage. Such injuries may be caused by pressure, either from the bony pelvis or from instruments. The localization of the scars in two of my cases suggest very definitely such etiology. In one of my cases the distribution of the pori together with the fact that one kidney exhibited a large scar from an early infarct, pointed to an embolism.

Since tuberculosis figures so significantly in the etiology of pleurisy with effusion it is essential that these patients be followed, like any tuberculous person, by frequent check-up and X-ray examinations. J. D. Wasserug, M.D., N.E. Jour. of Med., August 15, 1946.

THE EXPRESSION OF DOSAGE IN X-RAY AND RADIUM THERAPY

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The expression of dosage and x-ray and radium therapy is the foundation of scientific radiation therapy. The scope and effectiveness of radiation therapy has increased as the degree of accuracy of dosage expression has increased.

The objects of expressing this dose accurately are:

(1) To be able to reproduce repeatedly biological changes which experience has shown we can produce by radiation and which are clinically desirable.

(2) To do this with different equipment and with different technical factors.

(3) To change dosage with different conditions or because of a different patient response and know what the change amounts to.

(4) To permit the dissemination of experience in radiation therapy, and to provide a basis for the comparison of results in therapy between different clinics.

(5) To transfer information concerning therapy given a patient from one radiologist to another, when treatment must be continued elsewhere.

(6) To provide a common basis for the teaching of radiation therapy so that the students may apply their knowledge to the equipment which they may eventually use and, particularly in radium therapy, to the different forms, distribution, and strengths of radium sources which they may find available.

Radiation therapy is administered to produce a biological change in a particular volume of tissue. This change is accomplished by delivering a certain amount of radiant energy to that volume of tissue. No matter how well planned a course of radiation therapy may be there are usually some portions of the volume of tissue which will receive less radiation than others, The amount of radiation delivered to these portions of tumors is called the Minimum Tumor Dose and is the all-important factor in tumor therapy. It is from these portions of the tumor which have received the least radiation or Minimum Tumor Dose that recurrences of the tumor are most likely to develop.

The ideal expression of dosage would probably be in terms of some physical unit which would express the amount of energy absorbed per cc. of tissue. This unit should have a direct proportionality to the biological changes produced by the radiation. Such a unit is being discussed in the literature but is not sufficiently developed for clinical application.

The present concept of dosage expression is based on the assumption that the energy absorbed per cc. of tissue is proportional to the amount of energy delivered to the place where that tissue is. This is measured by the ionization of air produced by the radiation at that point. This dosage is expressed in term of a physical unit, the "roentgen", designated by a small "r".

There is another system of expressing radiation dosage that is based upon the ability of radiation to produce an erythema of the skin. This is a biological unit and is the basis for calculating the biological effectiveness of radiation therapy. Unfortunately there is not a simply proportionality between the physical unit, the roentgen, and the biological unit, the erythema dose. This proportion varies between wide limits depending upon the quality of the beam of radiation being used. For very soft radiation, such as Grenz Rays, it only takes about 200 r to produce an erythema, while for gamma rays of radium it takes about 1000 r. The amount required for ordinary x-ray beams as used in therapy lies between these two limits.

It might be interesting at this point to list the steps which the radiologist goes through in outlining a course of radiation therapy. Many of these steps are bypassed in practice because the radiologist has developed certain routine practices that eliminate their consideration. However, for training purposes they should be gone through as in this way the procedures can be adapted to any equipment, and to different technical factors.

First, the volume of tissue to be irradiated is determined. In tumor work this includes the tumor volume plus a margin of apparently normal tissue. From his experience the radiologist decides what Minimum Tumor Dose he wishes to deliver to this volume and over what period of

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time he wishes to deliver it. Next he decides upon the quality radiation which he will use, or combination of qualities. If more than one quality of radiation is used then the amount of the total Minimum Tumor Dose to be contributed by the separate qualities in erythema doses is determined. These erythema doses are then converted into roentgens for each quality.

The quality of radiation decided upon determines the technical factors to be used. In x-ray therapy these are KVP and filter. In radium therapy this is largely determined by the filter. ½ mm. of Pt. or its equivalent is sufficient to remove all A and B rays and leave the gamma rays as the sole useful radiation. Further filtration does not appreciably improve the quality of gamma radiation, and only reduces the intensity.

The tumor dose should be as uniformly distributed throughout the volume of tissue as possible. In x-ray therapy this is accomplished by choice of Skin Target Distance and number of ports used. The number of ports used is also determined by the number required to deliver the prescribed tumor dose without exceeding the safe skin dose for any port. The air doses to deliver these calculated skin doses and tumor dose are then determined. In radium therapy the uniformity of dose is determined by the number, active length, and distribution of the radioactive sources used. The rate of administration and degree of protraction and fractionation of the dose is then determined on the basis of clinical experience. Thus, it can be seen that the outlining of a course of radiation therapy is not a simple procedure.

The expression of dosage in x-ray and radium therapy depends somewhat upon the object of that expression. If one is simply discussing the results obtained in certain conditions with a certain technic it may be sufficient to state the Minimum Tumor Dose delivered in erythema dose or, "r" and beam quality, and the time over which this dose was delivered. If there has been some unusual method of distributing this dose in reference to time, this distribution should be given. However, if one is writing an article or a textbook, or is transmitting to another radiologist, the dosage given to a case which is to receive further radiation by that radiologist, the expression of dosage for x-ray therapy should contain the following information:

1. Total minimum tumor dose administered in erythema doses or "r". Sometimes the maximum tumor dose is also of interest.
2. Size and position of ports used.
3. Total skin dose, including exit dose if significant, received by each port.
4. Typical treatment factors: P.K.V, Filter, HVL, Ma, Time, air dose.
5. Sequence of treatment; number of ports treated per day, rate of protraction and fractionation.

In addition to the above physicial factors the size and location of the tumor being treated would be helpful.

It is surprising how seldom all of these factors are given.

With the publication of the Patterson-Parker curves, the data of Quimby and her associates, Garcia and others, the expression of dosage in radium therapy can be just as accurate as in x-ray therapy. This data has helped greatly to take the mystery and uncertainty out of radium therapy and put it on a sound basis. The definition of the roentgen has been broadened to include gamma radiation. The fundamental figure upon which radium therapy is based is that 1 mg. of radium in one hour, filtered with ½ mm. of platinum will deliver at 1 cm. distance 8.3 r. It takes 1000 of these gamma r to produce an erythema.

In expressing dosage in radium therapy again the emphasis should be on the Minimum Tumor Dose and the time in which that dose is delivered. Knowing this, the number of mg. hours of radium or of mcd., the filter, and the spatial distribution of the radioactive material may be calculated. Every effort to have the distribution of the radiation as uniform as possible throughout the tumor volume should be made. However, because of the fact that radium is usually used with very short distances between the radiation source and the volume of tissue being treated, there probably will be areas within the volume which will be grossly over irradiated.

There are two factors in radium therapy that deserve emphasis. One is the penetrating power or quality of gamma rays. This seems to be well known. They have a HVL of 1 cm. of

lead and they are so penetrating that in calculating dosage with them their absorption in tissue may be neglected and their intensity calculated solely on the basis of their geometrical spread. It is this other factor of geometrical spread which seems most difficult to comprehend. The intensity of gamma radiation varies exactly as other forms of electromagnetic radiation, inversely as the squares of the distances involved. This means that the intensity of radiation very close to a radiactive source may be very high but that a relatively short distance away it will have fallen off to a great extent. For example, take the case of a simple cervical tandem 1 cm., in diameter, with an active length of 5 cm. The tissue in contact with the mid-point of the tandem will receive 10 times the intensity of radiation that a point 2½ cm., further out will receive. If one uses 3500 mghr. of radiation with ½ mm. pt. filter the cervical canal will receive about 30 erythema doses and a point 2½ cm. out will receive about 3 erythema doses. If one considers 5 E as the minimum for a cancercidal effect and the tumor extends out 2½ cm. it is obvious that it has not received enough radiation.

The complete expression of dosage in radium therapy should contain the following information:

1. Minimum tumor dose delivered in r or erythema doses.
2. The amount of radium used and the time of application or the number of mcd.
3. The filtration.
4. The number, active length, strength, and spatial distribution of the radioactive sources used.

From this it is obvious that just to give the number of mgm. hrs. of radium used is far from an adequate expression or radium dosage.

To be able to furnish the data necessary to fully express radiation dosage it is necessary to keep full and accurate records. The form set up by the Standardization committee of the Radiological Society of North America is highly recommended. We have adapted this to our own set-up and find the record form we use very helpful.

In conclusion I should like to emphasize again that the Minimum Tumor Dose be the primary thought in radiation dosage. The number of treatments, the technical factors used, the number of ports, the skin dose, and the air dose are only incidental to the delivering of the primary object of radiation therapy which is the Tumor Dose. The same thing is true of radium therapy in which the number of mg. hrs. of radium or the number of mcd. used; and the filtration, the number, active length, strength and spatial distribution of the radioactive sources are incidental to the delivering of the Tumor Dose.

OBSERVATIONS ON MALNUTRITION IN SANTO TOMAS INTERNMENT CAMP

EMMET F. PEARSON, M.D.
SPRINGFIELD

A unique experiment in nutrition was a *fait accompli* incidental to the internment of 4,000 American and allied national civilians by the Japanese in Santo Tomas Internment Camp, Manila, from January, 1942, to February, 1945. Here, in the tropics, was a closed and controlled white community which was forced to subsist on an oriental type diet in gradually decreasing quantity. Records kept by the medical staff of the internment camp were made available to the author who served with one of the army hospitals established within this camp after its liberation. Observations, studies and statistics were made on the internees after their liberation and these were correlated. This was the only prisoner of war camp of the recent war about which medical information, before and after its liberation, has been published.[1]

During 1942 and 1943 there was no actual starvation within the camp. The internees were allowed to purchase foods from the natives. Shortly after the camp was established in 1942, a Japanese official states, "While we are victorious, we can afford to be magnanimous." When the Japanese began losing on all fronts, a drastic change in policy toward the internees was instituted. They were allowed no contact with the outside and were fed in gradually diminishing quantities. The daily ration promised by the Japanese was 400 grams of rice, 100 grams of fish, 20 grams of sugar and 10 grams of cocoanut oil. This was presumably the diet of a Japanese soldier. Such quantities were never approached. The actual amount issued

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daily, per individual, was as follows:

QUANTITY OF FOOD ISSUED PER CAPITA IN 1944

1944	Protein Grams	Carbohydrate Grams	Fat Grams	Calories
February	36.6	295	13.8	1,452
March	39	349	11.7	1,660
April	35	289	9.8	1,380
May	38.7	306	13.8	1,503
June	39	355	17.8	1,736
July	28.6	257	19.8	1,321
August	29	285	11.5	1,360
September	27.8	252	12.6	1,229
October	24	203	12.4	1,020
November	25.5	194	13.4	999
December	19.6	183	9.	898
Average—1944	31.2	270	13.2	1,323

It should be noted that the calories during 1944 gradually diminished from 1400 to 900 per individual, but more important was the fact that the protein ration dropped from 30 grams per day to about 20 grams. The effect of this type of feeding is conspicuously demonstrated by the mortality curve as shown herewith.

KNOWN DEATHS FROM ALL CAUSES
— ALL CAMPS — BY MONTHS

1942	January	6
	February	5
	March	6
	April	9
	May	8
	June	10
	July	12
	August	10
	September	8
	October	13
	November	8
	December	11
1943	January	5
	February	12
	March	5
	April	3
	May	9
	June	8
	July	8
	August	12
	September	6
	October	7
	November	5
	December	5
1944	January	5
	February	12
	March	4
	April	8
	May	6
	June	5
	July	9
	August	8
	September	7
	October	12
	November	19
	December	26
1945	January	43
	February	52
	March	21
	April	4
	May	1

The diet issued by the Japanese consisted of rice, some corn meal, a yam-like potato called camote, and, rarely, a small quantity of dried fish. A leafy vegetable called talinum was grown in the camp.

A survey made in the camp in August, 1944, showed that 27% of the internees had edema of the ankles and 80% had loose stools. After August the edema rapidly developed to epidemic proportions, so that by December 80% of the inmates had developed some degree of edema. The onset in the majority occurred when the daily protein intake dropped below 30 grams per capita.

Of the 435 internees who died during the internment in Santo Tomas and two auxiliary camps, the cause of death was attributed to malnutrition or beri beri in 60 individuals. There were 82 deaths attributed to heart failure, 43 to tuberculosis, and 30 to various intestinal disorders. In many of these cases death was precipitated by malnutrition.

After the camp was liberated, 1202 internees were admitted to the United States Army Hospitals, 567 of whom were given the primary diagnosis of malnutrition. The majority of these individuals had various stages of edema. The blood plasma protein determinations on them were universally low. The total protein was below 5 grams, albumin below 3 grams per 100 cc in almost every case tested. Less than 5% of the malnutrition cases had sufficient signs of peripheral neuritis to be considered beri beri. The edema was clearly due to hypoalbuminemia and not to vitamin deficiency. A supply of thiamin chloride reached the camp from American Red Cross sources in December, 1944, and generous intake of that vitamin did not notably affect the malnutrition edema unless there was also an adequate protein intake.

During the month of January, 1945, the crescendo of starvation was rapid so at the time the camp was liberated in February, mortality was increasing daily. The Army hospitals were

equipped with blood plasma, evaporated milk, powdered eggs, and some meats. In the severely hypoproteinemic cases, one or two units of plasma were given daily, and the individuals were encouraged to gradually increase their protein intake. Under this regime the vast majority of nutritional edema cases cleared up promptly. In a few cases the damage to various tissues seemed to be irreversible, and in spite of supportive treatments, the individuals continued to lose ground and finally died. One gained the impression that the breaking point or point of irreversibility depended upon the age of the individual, the older persons being most affected, and upon the presence of other complicating diseases, such as bacillary or amoebic dysentery.

An interesting observation was that clinical evidence of vitamin deficiency was rare. A small percentage of individuals showed some evidence of peripheral neuritis; in a few there were some eye signs thought to be due to Vitamin A deficiency, but there were no known cases of scurvy, pellegra, no ariboflavinosis and no rickets.

SUMMARY

The following deductions based on statistics and observations on the internees appear justified:

1. When the daily protein intake below 30 grams per capita, serious hypoalbuminemia developed.

2. Nutritional edema was present in 80% of recovered personnel and was due to hypoalbuminemia and not primarily related to vitamin deficiency.

3. Other important findings were secondary anemia — 85%, average loss of weight — 42 lbs., diarrhea — 80%, urinary frequency — 74%, pain in extremities — 40%, visual disturbance — 12%.

4. Psychoneurotic symptoms were rarely encountered.

5. Clinical signs of vitamin deficiency were rare.

6. In some cases of sever malnutrition, irreversible changes occurred in certain tissues, which prevented response to restoration measures. Thus, in spite of all supportive treatment, these individuals died.

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MODERN CONCEPT OF HEREDITY

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The Premendelian view of heredity in accordance with Galton's law of ancestral inheritance was that resemblance passed from parents to children as a total unit character. As heredity produced resemblance of parents and offspring, it was induced that all familial similarities, physicial and mental must be inherited, and the possible influence of enviroment was ignored as in the "Family History School" of Francis Galton. This method was unscientific as he tried to explain psychobiological phenomena with historic documents.

It was not until 1902, after the rediscovery of Mendel's paper, "Research on Plant Hybrids," that the era of scientific genetics began. Contrary to previous assumptions, Mendel conceived the appearance of an individual as a complex of characters which, if inherited, owed their manifestations to many single and independent factors. The physicial basis of these factors were not proven until the breeding mechanism of Drosophila Melanogaster, the vinegar fly, was detected by T. H. Morgan and his co-workers. Then they localized the heredity process inside of the chromosome in the cell nucleus. The chromosomes consist of numerous particles, the genes, now recognized as the transmitters of heredity. The human zygote is estimated to have 10,000 to 15,000 genes. These genes, bound together like beads, show normally the same spacial arrangement or locus and enable geneticists to draw topographic maps of the chromosomes. The gene, very probably a nucleo-protein molecule of the length of one ten millionth of an inch interacts with the surrounding cytoplasma and activates as catalyst the chemical process of development, that is, growth and differentiation. Genes do not transform themselves directly into particular traits; they give cells only the potentiality to development which is directed by the gradient fields of environment with all kinds of physico-chemical determinants.

In contrast to Mendel's theory, the cell rather than the whole organism is now to be recognized as a genetic complex, and it is denied that every

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character is determined by only one independent factor. Many genes synthetize a single character, and each of the genes affects the organism in many ways. A relatively simple appearance, the eye color depends on at least 20 genes. The more complicated a character is, the more genes are assumed to be involved. If a certain gene is lost from the gene complex the zygote can but exceptionally develop, ordinarily it becomes not viable at all. It is justified to figure that the human species has many thousands of live essential genes. Beliefs that hereditary ataxia, Huntington's Chorea and other heredodegenerative diseases of the central nervous system are due to single dominant or recessive factors do not concur with recent results of biological research.

Modern genetics demonstrated the lasting effect of various physicial agents on the genes. Radio-genetics revealed that gene mutation can be induced by radiating energies and thus prove the far reaching influence of enviroment.

In the method of "Pure Line Breeding" creatures of the closest genetic relationship are observed. W. Johannson, who experimented with beans, and Dobzhansky and Wright, who operated with Drosophila populations found even in pure lines a great variety which was ascribed to to the changing factors of the physical environment.

The closest human relationship can be studied in the so called identical twin method. However, this way of investigation cannot reveal a definite gene constellation. It gives only a vague estimate of the ratio of heredity to environment influence. Thereby it was learned that physical features are more under the sway of heredity, and mental traits more under the power of the environment. In a recent study, temperament was shown to have a greater correlation with the enviroment than had been thought previously. At the present time, however, there is no direct way to observe the dynamics of human heredity and to trace features to a certain human gene relationship.

Since we assume that heredity in man follows the same pattern as in plants and animals, we are entitled to hold inheritance responsible for certain conditions provided the observed facts will agree with the known genetics.

The question of heredity has been raised in no other discipline of medicine as often as in neuropsychiatry. The sheer diagnosis of neuropsychiatric diseases is rather difficult itself, but much more laborious, especially in mental disorders, is it to calculate the probability of inheritance. A bewildering terminology with multiplicity of connotations renders it the more difficult to give precise and generally understandable descriptions. Further pitfalls of diagnostics to be avoided are mixing biological and psychological concepts and expressing sociological values in medical terms.

Organic structures generally become faulty by a qualitative change. Fractures, degeneration, tumor infiltration, ulcers, etc., are pathological without regard to the extent of involvement. Mental traits, however, appear abnormal by a plus or minus variance. Structures and organs with all their inter-relations are understood to be parts of an organism. Mental traits are definitely not parts of a personality, but aspects of it. One also must consider that the symptomatology of the so-called organic mental disorders gives no clue as to the magnitude of structural changes, and that the borderline of normal behavior, in reality not discernible, is drawn in an arbitrary, conventional and subjective manner.

G. E. Coghill revealed that all animal behavior is integrated before the nervous system has developed, he further came to the conclusion that there are no primary reflexes which combine to a larger unit of behavior, but "that reflexes are secondary and are developed by individuation within a total behavior pattern of primary integration."

Heredity is in the last end a chemical process which cannot be analyzed, with methods of psychology which observe how a human being as an organism-as-a-whole, responds to the enviroment. Therefore, purely "functional" characters cannot be brought into a causal connection with a specific gene alteration. Consequently, mental disorders, like the so called familial mental deficiency and functional psychosis, cannot be assumed to be inherited as long as no steady cor-

relation with structural or physicochemical pecularities will be disclosed.

Before searching family lines for hereditary conditions, one must ascertain if a presumptive diagnosis refers to the same nosological entity in both present and past. After observation of an accurate diagnostic procedure, checking of pedigree reliability and other informing sources the interpretation of all data obtained might be tried.

If all premises of the above outlined diagnostics are given, and all incidents fit then into the system of the now recognized genetics, heredity might be concluded to be the etiology. Yet it will be very seldom possible to approach closely that conclusion. In medical practice, usually a suspicion more or less justified will be all which might be claimed.

SUMMARY

Heredity is considered a chemical process activated by interdependent genes which are discernible protein molecules. Genetics cannot tell yet how to select the best gene carriers or genotypes and cannot advise how to prove inheritance of purely mental disorders. Developmental capacities of a cell are guided by its genes; but particular differentiation and growth of cells are directed by enviromental forces.

COMMENTS

At the present time, geneticists cannot offer any help to preventive medicine. There is, however, no reason for the pessimism of F. J. Kallman and M. A. Bigelow who fear that "the less able strains in a nation might continue to outbreed the more able, and then nations might become ripe for conquest by some abler nations."

In the evolution of plant and animal kingdom the struggle of life competition has extinguished inferior mutants and let survive fit races only. Without eugenics, science has progressed, living standards have risen, duration of life has doubled, because the effects of physical, socio-economical and cultural factors of environment have been explored and utilized for the benefit of the individual. For a long time to come the progress of preventive medicine will depend entirely on the efforts to study the environmental effects upon men. One must agree with G. D. Stoddard who said that "if a social system can unleash such forces in a population biologically mongrel in type our efforts may center less in the putative quality of human materials and more in the opportunities for stimulation and development."

One has to warn against overemphasizing and popularizing the role of heredity in human society. That has been done too long and too much already in history and served to rationalize the delusions of innate aristocratic, racial and national superiorities and contributed to tyranny, persecution and war.

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DISCUSSION

Dr. Alex J. Arieff (Chicago): This concise and lucid presentation of Dr. Neuer's is quite timely. Overpopularization of any theory always produces some harm. When Mendel brought out his theory in 1860, it took 40 years to bring it to the fore. After that heredity theories became quite popular and everything was blamed on heredity. It remained for Thomas Morgan to recognize the process in the chromosome. In spite of the good fundamental work, many workers have over-simplified the processes and attempted to deal with people as though they were peas.

I was asked to discuss this paper from the viewpoint of the Municipal Psychiatric Institute of Chicago. In 1921, Dr. William Hickson, director of the Institute, (at that time called the Psycopathic Laboratory) because of his interest in heredity cooperated with H. McLaughlin of the Eugenics Office in Washington, D. C., and the latter published a book on eugenical sterilization in the United States.

You can see in those days things appeared to be a little more simple. In Hickson's report 1500 patients were called "defective delinquents" and committed to an institution as feeble-minded or insane. Institutionalization was preferred to jailing in helping to settle more crimes. One gathers from their work that they considered dementia praecox and feeblemindedness to be hereditary. As you know, the patients seen at the Municipal Psychiatric Institute are mostly court cases, the arrests arising from any sort of offense, excluding a felony, and when the court sees fit, they are sent in for an examination. In Hickson's time, most of the cases were either obviously insane or feebleminded (65% dementia praecox and 35% feebleminded). In our case load, about 3200 a year, about one-third are certified insane or feebleminded and of that number, not all of the individuals remain permanently institutionalized. Many of them have acute episodes and are later released to return to society. It is the other 65% we see who present to us the greatest problem.

Dr. Hickson's idea was that most conditions are hereditary and that if these individuals could be institutionalized and many or most sterilized, that would solve society's crime problem. Because of these conclusions, a bill called the "Crime Prevention Bill," was put forth in the State Legislature in 1921. This provided for segregation of incorrigible criminals and/or

individuals with mental or moral defects. The mental defective was classified as one having (1) a defect in intellect, (2) a defect in emotions, (3) a defect of will with criminal propensities who is a menace. This would put away all criminals and future sterilization would do the rest. I believe all lawyers would see to it that such a bill would not be passed, — and it was not passed. However, in 1937-38, a more select bill, the Sex Psychopathic Act, was passed, but up until a week ago not one case had been committed in Cook County under its provisions.

As stated previously, we know that most of the problems which we have at the Municipal Psychiatric Institute are not those which can be solved by institutionalization and/or sterilization. If you sterilized everyone in the world, I suppose that would solve all the problems of our time.

The problem is not a simple one, in spite of the good work of McLaughlin in publishing this book. The study of heredity is a great problem. One must have adequate facilities for studying the various diseases. In Psychiatry, patients as the psychopath should be brought to some place where there would be adequate personnel to study them over a long period of time. When this is done, and only then, will any definite headway be made.

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DISCOVERY OF ANESTHESIA MADE EXPERIMENTAL SURGERY POSSIBLE

Doctor Points To Anesthesia As Important Contribution To Advances In Surgery And To Realm Of Medicine

To most people the introduction of anesthesia into surgery implies the elimination of pain from operations whereas the result is more far reaching, according to Evarts A. Graham, M.D., of St. Louis.

Writing in the January 11 issue of *The Journal of the American Medical Association*, Dr. Graham, who is from the Department of Surgery, Washington University School of Medicine and Barnes Hospital, reviews the significance of anesthesia in medical progress during the last hundred years.

On October 16, 1846 William T. Morton, an American dental surgeon, publicly administered ether at the Massachuetts General hospital while Dr. J. C. Waren performed a painless operation.

"To the layman this important discovery usual-

ly implies only that now the patient could undergo an operation without the pain which formerly had to be endured," states the author. "Actually, however, as with most fundamental discoveries, the results were much more far reaching. Speed no longer was the important factor. Slapdash surgery was supplanted by slower but more careful work. Again, the muscles of the patient were relaxed and there was no struggling. Many modern operations could not be performed without the relaxation of the patient, and in all operations it is desirable that there should be no struggling. But aside from the beneficial effect on the human patient the discovery of anesthesia made possible to operate on animals without pain. As a result, therefore, of experimental operations painlessly performed on animals a tremendous amount of knowledge was acquired which not only advanced the art of surgery but affected the whole realm of medicine.

"The functions of organs could now be studied by noting the effects of their removal. For example, how could one suppose that the pancreas was concerned in the use of sugar except by the fact that its removal immediately resulted in the condition of diabetes? Various operations on the stomach and intestines of animals taught the physiologists much about the processes of digestion in addition to paving the way for the surgeons to apply some of those operations to man for curative purposes. Indeed, practically all of our fundamental knowledge of the functions of our various organs has been derived from experimental operations on animals, and most of that knowledge has been acquired since it has been possible to use general anesthesia for the experiments. The development of the scientific basis of medicine, therefore, has depended to a considerable degree on the existence of a method of anesthetizing experimental animals."

Tuberculosis, dysentery, pyogenic infections, scarlet fever, and pneumonia were the fatal complications in most of the persons dying from malnutrition at Leningrad (during the war). The acute virulent type of tuberculosis has been noted in many parts of Europe in famine.

A constant and depressing conclusion remains. War inevitably creates famine and even the most admirable medical and social efforts of the community only suffice to ameliorate the appalling consequences. Josef Brozek, Samuel Wells, and Ancel Keys, Am. Rev. of Soviet Med., Oct., 1946.

U. S. PUBLIC HEALTH SERVICE PROVIDES PROOF DEMEROL IS ADDICTING DRUG

More and more evidence is being accumulated at the United States Public Health Service Hospital at Lexington, Ky., to show that Demerol is an addicting drug.

Three cases illustrating addiction to Demerol are reported in the December 28 issue of *The Journal of the American Medical Association* by Herbert Wieder, M.D., Assistant Surgeon (R), United States Public Health Service, Lexington.

Dr. Wieder points out that Demerol "should be regarded as an addicting drug in the same class as the opiates."

Demerol, which was discovered in Germany, is under federal narcotic control.

NEED FOR PREVENTIVE MEASURES TO ARREST RINGWORM OF SCALP

Two Doctors Tell How An Epidemic Of This Infection Was Met And Overcome By Two Cities In Minnesota

How two cities met and overcame an epidemic of ringworm of the scalp is told by two doctors writing in the February 1 issue of *The Journal of the American Medical Association.*

The doctors—Richard J. Steves of Des Moines, Ia., and Francis W. Lynch of St. Paul—are from the Division of Dermatology, University of Minnesota.

"An unusual opportunity presented itself to study an epidemic in the twin cities of Minneapolis and St. Paul, where every form of ringworm of the scalp was rare prior to 1943," state the authors. "In 1945 and 1946 about 747 cases were observed in Minneapolis, St. Paul and surrounding communities. Microsporon audouini was the organism responsible for all cases in St. Paul and surrounding communities, but not in Minneapolis, where nearly 20 per cent of the cases were caused by other types of fungi."

There findings in this study are as follows:

"Of 635 children infected by M. audouini, the average age was 7.2 years, the ages varying from one to 16 years.

"Infection was found nine times as often in boys as in girls.

"The epidemic apparently began in St. Paul with the infection of a Negro family, and three per cent of the total cases were observed among Negroes. This is approximately 50 per cent greater than the proportion of Negro persons to the total population."

The disease spread with such rapidity during 1945 that for a time the epidemic threatened to get out of control in St. Paul. The authors present the following figures to illustrate the increase: On Jan. 1, 1945 there

were two cases in Minneapolis and 51 in St. Paul; on Jan. 1, 1946 there were 51 cases in Minneapolis and 584 in St. Paul.

Two types of treatment were attempted. In a selected series of 486 children, 25 per cent of 298 patients were cured by removal of the hairs by hand and local applications of simple remedies, and 80 per cent of 188 patients were cured by x-ray treatment.

The Wood light is valuable in diagnosing ringworm of the scalp. In a darkened room, under this light, normal skin and hair fluoresce faintly, while hairs infected with the fungi show brilliant beads of fluorescence and scaly areas appear turquoise blue. The physicians state that the "use of the Wood light is indispensable in the presence of an epidemic. It is used in surveying schools to detect early or unrecognized cases, and it is the only satisfactory method of determining when a case has been cured."

The authors, cognizant of the present country-wide epidemic of ringworm of the scalp, sent questionnaires in January 1946 to the health officer in at least two cities in each state and in each city with a population of over 40,000. "Replies were received from 175 of 220 inquiries," they state. "Epidemic ringworm of the scalp had appeared in 61 cities, and replies indicated that it probably was present in 27 additional cities."

Drs. Steves and Lynch point out that "in the presence of an epidemic the individual physician cannot handle the problem alone. The public health aspects of the disease far outweigh the treatment of the individual patient, and it is the duty of the school, city, county and state health departments to take adequate and early precautions to prevent spread."

They concluded with the statement that "the greatest incidence of the disease occurs in the East and Middle West. This may be due to New York City, Washington, D. C., Chicago and Detroit acting as large foci from which other communities are infected."

RAGWEED, COMMON CAUSE OF ASTHMA AND HAY FEVER, MAY PRODUCE RASH

Ragweed, common cause of asthma and hay fever in the United States, may also cause inflammation of the skin, according to three Rochester, N. Y., doctors writing in the current issue of *Occupational Medicine*, published by the American Medical Association.

The doctors, all from the Medical Department of the Eastman Kodak Company, are Benjamin J. Slater, Associate Medical Director, John L. Norris and Nathan Francis.

They state that "while ragweed is the commonest cause of asthma and hay fever in the United States, it rarely causes dermatitis, not unlike that seen after exposure to poison ivy, oak or sumac. The rash is usually distributed on the exposed surfaces of the body, such as the face, neck, forearms, hands, legs and feet, but may, like other forms of dermatitis venenata, involve the whole body. The condition is not hereditary, and, as a rule, those who get the dermatitis from the ragweed do not get hay fever or asthma."

Symptoms usually appear in August and end with the frost, corresponding with the period of pollenation of ragweed. However, the authors point out that the eruption may appear as early as May, when the ragweed plant begins to grow, and may continue well up to November, as the ragweed plant maintains its vitality up to that time.

Farmers, grain handlers and hunters are warned that contact with the dried weed and seed will produce dermatitis at any time of the year if they are sensitive. The eruption may also be continued by pyrethrum insect powder, turpentine, vegetable oils or other material which can cause dermatitis.

★

EDUCATION

and

RELAXATION

at your

ANNUAL MEETING

May 12, 13, 14, at Chicago

Clinical Pathological Conference

PRESENTATION OF CASES
By
HOWARD WAKEFIELD, M.D., Chairman
EDWIN F. HIRSCH, M.D., Pathologist
St. Luke's Hospital
CHICAGO

Case 1.

LARGE GLIOMA OF THE SUPERIOR VERMIS OF THE CEREBELLUM

A 25 year old white male was admitted to St. Luke's Hospital in the care of Doctor Eric Oldberg on September 21, 1946, complaining of headaches of two weeks duration.

Two weeks before admission the patient began to have headaches, at first dull in character and noticed mainly in both temporoparietal regions. Later they were described as throbbing in nature and were made worse by movements of the head. During the three days before entering the hospital he was confined to bed with violent headaches, vomiting, photophobia and was said to be disoriented during part of this time. A lumbar spinal puncture revealed a spinal fluid pressure of 190 mms. of water. The past history was irrelevant.

When admitted he was alert and well oriented but complained of a severe headache. The temperature was 99.2° F., the pulse 60, the respirations 22 per minute and the blood pressure 124/70. The left pupil was slightly larger than the right and both reacted to light. There was a slight nystagmus to the right. Movements of the head increased the pain. There was a mild ataxia in the finger-to-nose test.

There were 4,720,000 erythrocytes and 6,500 leucocytes per cmm. of blood and the hemoglobin was 14.8 gams percent. On September 23 a lumbar puncture yielded clear colorless fluid with an initial pressure of 200 mms. of water. The pressure was 120 five minutes after removing 5 cc. of fluid. There were 4 leucocytes per cmm. of fluid, the Wassermann and Pandy tests were negative, there were 50 mgm. percent protein and the colloidal gold curve was 1112221000.

On September 24, 1946, a right ventriculogram was performed and a moderate symmetrical hydrocephalus of the lateral and third ventricles was revealed. An exploratory operation of the posterior cranial fossa was contemplated but the patient expired before this was attempted on September 25, 1946, his fifth hospital day.

The essentials of the anatomic diagnosis of the postmortem examination are:

Large glioma of the superior vermis of the cerebellum;

Moderate symmetrical hydrocephalus of the lateral and third ventricles of the brain;

Moderate flattening of the convolutions and narrowing of the sulci of the brain;

Recent ventriculogram wound of the scalp and burr hole of the calvarium of the right side of the head;

Hyperemia of the lungs;

Hypertrophy of the myocardium of the heart.

The complete postmortem examination demonstrated no unusual changes in the neck and trunk tissues. The essential pathology was in the brain. The brain with the upper half of the dura weighed 1400 gms. The cerebral hemispheres were symmetrical and had no regions of softening or tumor masses. The convolutions were moderately flattened and the sulci correspondingly narrowed. The cerebellar hemispheres were symmetrical. In the midline of the vermis on the superior surface of the cerebellum was an elevated grey yellow firm tumor, partially necro-

Case 1. Figure 1. Photograph illustrating the large glioma of the superior vermis of the cerebellum.

tic, 5.0 by 4.0 cms. and elevated 1.5 cms. The center of the tumor was in the midline. The leptomeninges were thin and translucent, the blood vessels at the base had thin walls. After formalin fixation the brain was hemisected in the midsagittal plane (Figure 1.). In the right parietal lobe 6.5 cms. from the occipital pole and 2.0 cms. from the midline was a ventriculogram needle puncture laceration 1 cm. in diameter which extended to the lateral ventricle. The tumor in the midline of the cerebellum extended to the posterior margin of this portion of the brain and was 4 cms. in diameter. It compressed the cerebellar tissues and the aqueduct. The tumor tissues did not communicate with the fourth venericle or with an ependymal surface. Histologically the cellular tumor tissues were spongioblastic glioma.

Case 2.

TUBERCULOSIS ULCERATION OF THE TERMINAL ILEUM, ILEO-CAECAL VALVE AND ASCENDING COLON

A 71 year old white female entered St. Luke's Hospital in the care of Doctor R. C. Roskelley at 4:05 p.m. on September 29, 1946, complaining of abdominal pain of two days duration.

She had complained of a poor appetite during the last year and had lost an estimated 40 pounds of weight during this time. She was teated for anemia with "Lextron and shots" during part of this period and during the three and one-half weeks before admission she remained in bed at home. She had complained of burning pain on urination for the past two weeks and two days before admission abdominal pain was noticed which was intermittent in the beginning but became more constant and involved the abdomen generally. There were four loose stools during the two days before entering the hospital.

At the time of admission the patient was dehydrated, incoherent and uncooperative. The respirations were said to be "gasping", the temperature was 102° F., the pulse was 138 per minute and the blood pressure was 75/55. There was considerable voluntary rigidity of the abdomen and the patient complained of pain wherever the abdomen was palpated. The pain seemed to be most intense in the right lower quadrant and there was thought to be a palpable mass in this region.

She was taken to the x-ray Department for a film of the abdomen about two hours after admission, and she expired during the examination. The x-ray findings were: "Numerous phleboliths in the pelvis. Calcified para-iliac nodes. Calcification of the pelvic blood vessels and femoral arteries. Osteoarthritis involving the lumbar spine. Obstruction involving the small bowel."

The essentials of the anatomic diagnosis of the postmortem examination are:

Tuberculous ulceration of the terminal ileum, ileo-caecal valve and asending colon;

Spontaneous perforation of the ileum;

Acute generalized fibrino-purulent peritonitis;

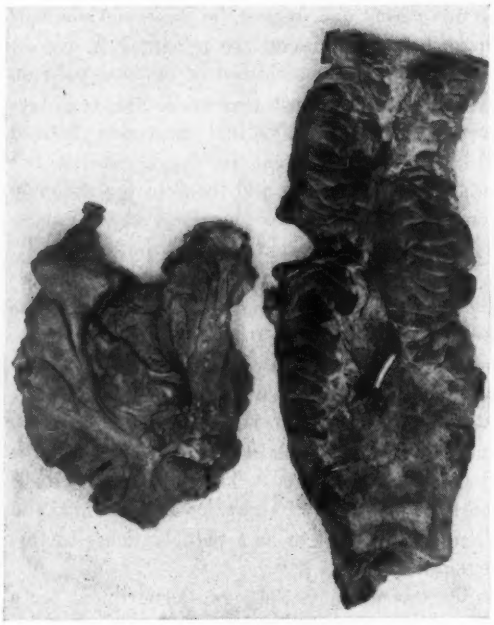
Nodular tuberculosis of the mesentery of the ileum;

Miliary tuberculosis of the lungs, liver and spleen;

Abscess of the right lower quadrant of the peritoneum;

Atherosclerosis of the aorta and its main branches.

The emancipated body of this senile white woman weighed 93 pounds. The peritoneal cavity contained about 200 cc. of a turbid green-yellow fluid, and there was a generalized fibrinous peritonitis binding the loops of small bowel together. The lower end of the ileum was adherent to the parietal peritoneum in the region of the right inguinal ligament and beneath this was an abscess filled with yellow exudate 5 cms.



Case 2. Figure 2. Photograph illustrating the tuberculous modules on the mesentary of the ileum. The probe is in the lumen of the spontaneous perforation of the ileum.

Case 2. Figure 3. Photograph illustrating the tuberculous ulceration of the lining of the terminal ileum, ileocecal valve and ascending colon. The probe is in the spontaneous perforation of the ileum.

in diameter. On the antimesenteric border of the ileum here, at a level 12 cms. from the ileo-caecal valve, was a perforation 5 mms. in diameter. The tissues about it were gangrenous. The wall of the ileum from here to the ileo-caecal valve was thickened by fibrous tissue and on the peritoneum were firm grey nodules 2 to 4 mms. in diameter (Figure 2). When the bowel had been opened, beginning at a level 24 cms. proximal to the ileo-caecal valve the lining of the bowel was ulcerated, granular, and without its usual folds (Figure 3). Two islands of mucosa without ulceration 3.5 by 1.8 cms. and 2.0 bu. 1.4 cms. were in this portion of the bowel. Although not ulcerated, these regions were scarred. The perforation of the ileum was 3.5 cms. distal to the proximal edge of ulcerated tissues. The wall of the ileum here was thickened to 6 mms. and the lumen was greatly reduced. The ulceration of the ileum extended into the ileo-caecal valve and into the caecum for 5 cms. At a level 11 cms. beyond the ileo-caecal valve was another ulcer 5 cms. long and 3 cms. wide. The ulcerated tissues of the ileum and colon, histologically were tuberculous and there were also caseous miliary nodules in the lungs, liver and spleen.

Case 3

SPONTANEOUS RUPTURE OF A LARGE ANEURYSM OF THE LEFT MIDDLE CEREBRAL ARTERY

A 68 year old negress entered St. Luke's Hospital in the care of Doctor R. Dolkart on October 6, 1946, with a paralysis of her right side and coma of one day's duration.

She had felt well during the day before entering the hospital, but while attending church in the evening had a sudden "sickness" with nausea and vomiting. This was followed by flaccid paralysis of the right side and coma. A history of preceding illness was not obtained.

She was comatose but responded slightly to painful stimuli at the time of admission. The temperature was 98.8° F., the pulse was 88, and the respirations were said to be Kussmaul in type at a rate of 28 per minute. The respirations later were said to be of the Cheyne-Stokes type. The blood pressure was 190/108. When first examined there was "flaccidity" of both sides, more marked on the right. During the first few hours in the hospital, "generalized spasticity" developed.

There were 4 plus sugar and acetone and 500 mgms. percent of albumin in the urine. The blood sugar was 220 mgms. percent and the CO_2 combining power of the blood was 51.4 volumes percent. There were 3,620,000 erythrocytes and 14,900 leucocytes per cmm, of blood and 10.8 grams percent of hemoglobin. The differential white count revealed 81 polymorphonuclear leucocytes, 5 band forms, 1 eosinophil, 12 lymphocytes and 1 monocyte. The blood Kahn test negative.

A lumbar spinal puncture yielded grossly bloody fluid with an initial pressure of 250 mms. of water. Fluid was withdrawn until the pressure was 160 mms. With diabetic management the blood sugar was reduced to 89 mgms. percent the day after admission. The blood urea nitrogen, non-protein nitrogen and protein were normal. She remained comatose and the day after admission it was noted that there was a paresis of the left side of the face, marked rigidity of the neck, left arm and leg. The Babinski sign was positive on both sides. The temperature rose to 101.4° F. about 10 hours after admission and went as low as 96.6° F. the following day. At this time the pulse was 118. She expired on October 8, 1946, her second hospital day.

The essentials of the anatomic diagnosis of the postmortem examination are:

Spontaneous rupture of a large aneurysm of the left middle cerebral artery;

Large recent hemorrhage into the left basal nuclei, left lateral ventricle and subarachnoid space of the brain;

Marked atherosclerosis of the cerebral arteries and of the aorta and its main branches;

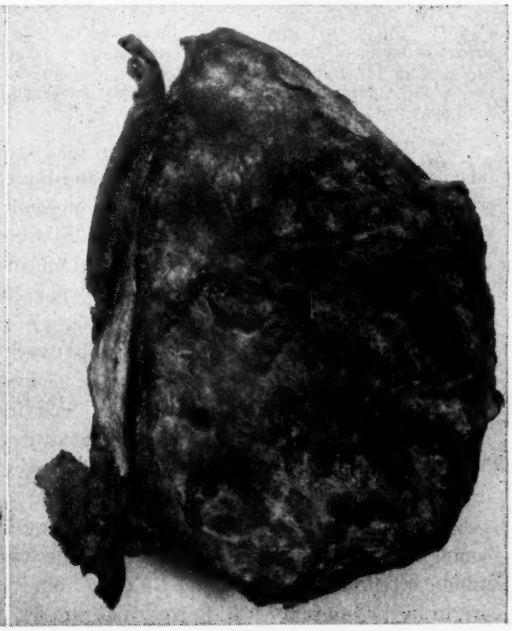
Hypertrophy of the myocardium of the heart;

Hyperemia and edema of the lungs;

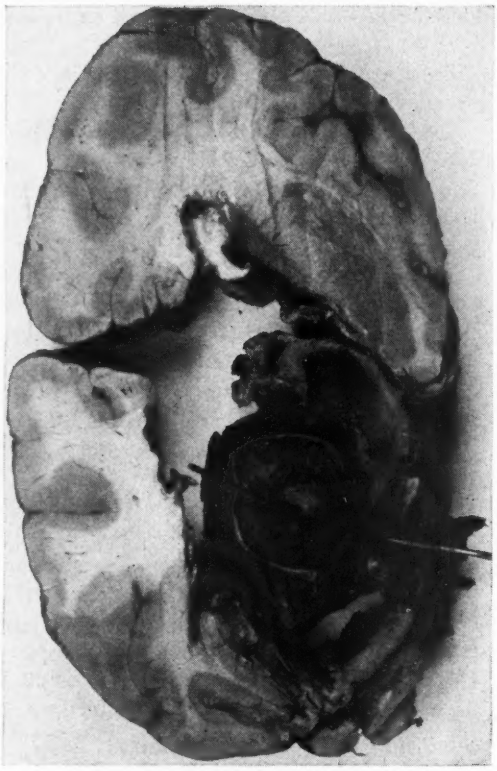
Marked calcification and ossification of the dura mater of the brain.

The essential portions of the complete postmortem examination were limited to the head. There were no recent injuries of the superficial and deep tissues of the scalp. The dura covering the left cerebral hemisphere was ossified and ranged to 1 cm. in thickness (Figures 4 and 5); that covering the right hemisphere had scattered plaques of bone. These dural tissues weighed 115 gms. The leptomeninges were adherent to the ossified dura in the left fronto-parietal region.

Case 3. Figure 4. Photograph illustrating the external surface of the ossified dura. Note the grooves for the anterior and posterior divisions of the middle meningeal vessels and the groove of the superior sagittal sulcus.



Case 3. Figure 5. Photograph illustrating the internal surface of the ossified dura.



Case 3. Figure 6. Photograph illustrating the ruptured aneurysm of the left middle cerebral artery. The probe is in the communication between the aneurysm and artery. Note the hemorrhage into the subarachnoid space and basal nuclei.

The cerebrospinal fluid contained blood and there was a large amount of fluid and clotted blood in the subarachnoid space on the inferior surface of the brain about the optic chiasm and upper portion of the brain stem, more on the left side than the right. There was a large spontaneous hemorrhage and laceration of the brain tissues in the left basal ganglia. After formalin fixation a frontal section of the brain at the level and in front of the optic chiasm disclosed a blood clot 5 by 4 cms. which extended through the cortex into the left basal ganglia. In this was a large saccular aneurysm 2.5 cms. in diameter having a communication 3 mms. in diameter with the left middle cerebral artery at a level 1.5 cms. from its origin in the internal carotid artery (Figure 6).

WAR DEPT. RESEARCH (Continued)

in the hands of scientists, and that practically all work is done on contract rather than in War Department establishments — an exception being work requiring ballistics ranges "which do not normally exist in industrial laboratories or educational institutions."

"Another policy in connection with these contracts for pure research is that they are only made in those fields where the War Department believes that research work should be accelerated in order that we may stay ahead of our competitors. The War Department makes no pure research contracts for the purpose of subsidization of anything. We realize that subsidization, imprisonment of science, or militarization will keep us from getting the basic information which we need. It would be folly for us to so defeat our own ends."

TRACE SENSITIVITY TO PLAYING CARDS

Certain chemicals which are used in the finish of playing cards may cause a rash due to the hypersensitivity of the person, according to the December 7 issue of *The Journal of the American Medical Association.*

Answering a query on which of these chemicals might produce a contact dermatitis, *The Journal* states:

"The ordinary playing cards are made of paper and stiffened with sizings. Sizings may be any of the natural or synthetic resins or such substances as sodium silicate. Any of the synthetic resins, if they are not completely cured, may cause sensitization dermatitis. Of the natural resins, rosin is the best known sensitizer. Sodium silicate, water-glass, has not been reported as the cause of sensitization dermatitis.

"Within the past few years there have appeared on the market washable playing cards which are made of synthetic plastics. If these are incompletely cured they may cause dermatitis, just as may the synthetic resin sizings. In instances in which the dye comes off the playing cards, it is possible that some one may be sensitive to such dyes."

Attend Your ANNUAL MEETING, *May 12, 13, 14*

Council Meeting Minutes

The regular January meeting of the Council was held at the Palmer House, Chicago on Sunday, January 5, 1947 with the following present. Berghoff, Neece, Hughes, Hopkins, Hawkinson, Hedge, Harker, Saunders, Blair, Peairs, Stevenson, English, Lane, Otrich, Hamilton, Coleman, Camp, Henry Poncher, John W. Neal, O'Neill, Ann Fox, James C. Leary, Ralph, McReynolds, P. R. Blodget, D. B. Pond, H. K. Scatliff, James H. Hutton, R. R. Cross.

MOTION: (Blair-Neece) that the minutes of the last meeting of the Council be approved as mailed to members. Motion carried.

Report of the Secretary

The secretary read his report outlining the sale of exhibit spaces for the 1947 meeting. During the first three days following receipt of the diagram-application blanks 90 of the 115 booths have been sold by phone, wire and letter. This indicates a sell-out. Firms about which there is some question and who wish to apply for space, will be discussed and passed upon by the advisory committee of which Prather Saunders is the chairman.

An overall addition of 10% on our printing bills for the Journal went into effect on December 1, 1946.

The question of full time employees in hospitals will come up for discussion during the morning. The fact that several hospitals contemplate the use of full time men in various specialties with the hospital commercializing on their work, has been called to our attention by several members. Physicians who practice in this way are subject to discipline by their local societies, and it may be possible to have hospitals engaging in this type of work removed from the approved list for interne and resident training.

The Illinois State Nurses' Association has approved the constitution and by-laws of the Illinois Interprofessional Council and is desirous of becoming a participating organization.

The chairman ruled that the report of the secretary be accepted.

President's Report

Berghoff reported as president stating that he had attended various meetings recently. The committee of which he is a member have been holding meetings: the Educational Committee, the Medical Service and Public Relations Committee, the Scientific Service and Post Graduate Committees. The latter two are now busy compiling material to publish a handbook of speakers which should be ready for distribution by March. Post Graduate meetings will be held in Joliet on January 22nd, East St. Louis the first Thursday in April, and in Mattoon April 17.

Work on the Benevolence Fund campaign for contributions will be opened by an article in the Journal. Letters will be sent to all members of the society, and it is hoped that many will respond.

The tuberculosis situation in Illinois has been brought before us recently through the committee in Cook County of which Dr. Hutton is now chairman. The survey of the situation shows a condition serious in Cook county and not much better in the downstate area. Work is being done and the Post War Planning Committee expects to have the money to build two downstate sanatoria plus that planned for Cook County.

The hospital survey in Illinois should be finished by August, and instead of a year's job, this has developed into a two year proposition. The material is about ready to be evaluated.

Report of President-Elect

Neece reported as President-Elect stating that he had attended two days of the session of the A.M.A. House of Delegates in December; he stated that the downstate projects seemed to be going well, and that only one unpleasant item had to be reported: In his local society a physician was convicted under the Federal Narcotic Act.

Reports of Councilors

Hamilton: There is a Post Graduate Conference scheduled for Joliet on January 22, 1947.

Peairs: The local health unit in McLean County is well estabished and there are 16 full time employees there at this time. The unit should be a good one, and work is satisfactory.

English: There will be a meeting in Champaign of the Illinois Farm and Home week, attended by some 1500 farmers and their wives. A debate between John W. Neal and Zeigler on the question of compulsory health insurance has been arranged.

Medical Service and Public Relations

Hutton reported as chairman of the Medical Service and Public Relations Committee.

Doctor Ford K. Hick, at a recent meeting of the Educational Committee, discussed the possibility of the University of Illinois presenting a post-graduate course for men who fail to pass their licensing examination given by the Department of Registration and Education.

It might be wise to have representatives of the Committee on Medical Service and Public Relations present at other committee meetings, or invite other committees to attend meetings with them. The preparation of a handbook for the laity is being considered by the Educational Committee. A summary of past topics prepared for "Do You Know" is being assembled so duplicate material will not be sent out. A two week limit on package library material is to be established so that the material will not be out over too long a period of time. A booth display for the state meeting, for county and state fairs, and for the A.M.A. meeting next June is being contemplated.

Miss Fox discussed the general idea under discussion at this time to be developed for this display. The setup would highlight the county society, the state society, and would tie in the State Health Department and the Medical Examining Board. The display would show the student graduating, passing his state boards and becoming a cog in the wheel of organized medicine with all its various ramifications. The unit would be mobile so that it could be used for display purposes in various places. $1500.00 should be ample to provide the material and have the work done.

Hutton: The idea at this time is to ask the Council to approve the preparation of this display in principle.

Prepayment Plans

Hopkins reported as chairman of the Committee on Voluntary Prepayment Medical Care Plans stating that the suggested revision had been made and the rewording of the principles recommended by Neal. The new material was sent to all members of the committee. The Northern Trust of Aurora is now writing policies and has several large groups in Peoria lined up to be sold. The material being prepared to present to the A.M.A. for aproval will be organized and presented in proper order. Approval for our state plan will be sought from the Associated Medical Care Plans as soon as qualifications are met.

MOTION: (Hopkins-Hamilton) that this portion of the report be adopted. Motion carried.

Veterans Administration

At the last meeting of the Council certain changes were made in the fee schedule and were approved. Certain changes were not approved by the Central Office of the Veterans Administration and their suggested substitute fees are herewith called to your attention:

379a.	Rh Factor	$ 2.00
353.	Blood transfusion, not including cost of blood	20.00
353a.	Blood transfusion, not including cost of blood, involving exposure of vein	35.00

MOTION: (Hopkins-Hamilton) that these changes be approved and incorporated in the reprinted fee schedule. Motion carried.

MOTION: (Hopkins-Neece) that the report be adopted as a whole. Motion carried.

Journal Report

Hopkins reported as chairman of the Journal Committee stated that no opportunity had presented itself to secure new bids for printing the Journal. The contract with Wayside Press expires in the late summer and information will be secured from other concerns before that time.

MOTION: (Hopkins-Hedge) that the 10% raise in overall prices charged by the Wayside Press be allowed. Motion carried.

Benevolence Report

Hawkinson reported as chairman of the Benevolence Committee stating that the next issue of the Journal would carry an announcement of committee activity, start the ball rolling on the campaign to solicit funds for the Committee, and in the near future, a letter would be sent to every member of the Society dealing with this project, and asking that consideration be given the development of a trust fund, the income from which would care for the needs.

Medical Testimony

Hawkinson also reported that the development of a Committee on Medical Testimony in the state society was a project in which he was most interested. The committee as such has been functioning in the Chicago Medical Society for the past two years, and recognition has been given them by the Bar Association for their interesting work. They were invited to attend a meeting of all Circuit Judges held in Chicago, and the members of the legal profession are becoming cognizant of the committee and its efforts to control medical testimony given in courts of law.

MOTION: (Hawkinson-English) that proper amendments to the Constitution and By-Laws as to provide for such a Committee for the State Society, be presented at the 1947 meeting of the House of Delegates. Motion carried.

Medico-Legal Committee

Then, relative to the Committee on Professional Demeanor, and the motion made in the House of Delegates by Dr. Scatliff which authorized the change of the name back to the Medico-Legal Committee; this Committee has done some work in the Chicago area and very little downstate. Only one or two cases have been called to our attention. However, with the return of the name and the correct interpretation of the title, perhaps more assistance can be given Illinois physicians threatened with malpractice.

I.P.A.C. Report

Coleman reported that the Advisory Committee to the Illinois Public Aid Commission had met and discussed several projects, the first and most important at the present is a general revision of the fee schedule for major surgery upward. These increases which

bring certain major operations (plus reasonable after care) to $100.00 instead of the former $50.00 to $75.00, will go into effect by February 1, 1947. If there is a long siege of after care needed on some particular case, the Committee and the I.P.A.C. will review and consider additional payment on an individual basis. This will apply at present to the downstate only. The situation in Chicago still remains the same, but the I.P.A.C. seems willing to discuss the matter with the representatives of Chicago and definitely is in a receptive mood.

MOTION: (Hopkins-Harker) that the Council invite the C.M.S. to appoint a committee to confer with the state Advisory Committee on the I.P.A.C., and to meet with them to work on this matter. Motion carried.

Rural Health Report

English reported as chairman of the Committee on Rural Health and outlined the work being done at this time. (1) Hospitals to be built in rural areas under the Hill-Burton Bill should be given serious consideration; (2) Physicians are needed in the rural areas, and funds for students from such areas should be available so that they could receive a medical education and return to their "home ground"; (3) Nurses also are needed and there is a definite need for the so-called "practical" nurse. Courses for Nurses Aides should be offered so that these people could care for the chronically ill; (4) Post-graduate training fills an important place in rural medical life, and should be continued and encouraged; (5) Questionnaires: Instead of questioning rural doctors, the committee feels that we should question the future suppliers of medical care in the rural areas as well as the consumers of such care.

Coleman stated that English should be commended for his report and for the work of the committee, which should be continued. Such a report should be called to the attention of the House of Delegates. Otrich: I would suggest that this report be submitted to the Committee on Rural Health Service of the A.M.A. and also to the Department of Public Health.

MOTION: (Hedge-Lane) that the report be sent to the A.M.A. Committee, to the Department of Public Health, members of the Council, and that the expenses of the chairman be paid to attend the A.M.A. National Conference on Rural Health on February 7 and 8. Motion carried.

Department of Public Health

Cross stated that he had little to report. The hospital survey will be straightened out and the differences which exist will be eliminated. The material will be ready to evaluate soon.

The tuberculosis situation referred to by Hutton is one of the serious situations in Illinois. It should be controlled by the Department of Public Health under the Division for Communicable Diseases, and adequate funds should be available for the work. Under the existing laws taxes can be assessed in each county up to 1½ mills; if this is not adequate, state aid could be given, and such a request has been made to the Governor. State money could go to such counties on the basis of need after the tax has been assessed to the maximum.

In my opinion technicians should be licensed, and this should be done to maintain the standards needed in such work. Also, I would like to have it made mandatory that a health officer be appointed in all township and villages where no such office is in existance.

Hutton discussed the conditions prevalent in Illinois relative to tuberculosis, and the present situation. In one year there were 1200 cases of polio and the public contributed 12 million dollars to combat the disease. In the same year tuberculosis caused 60,000 deaths and the public gave 5 million dollars to fight that disease. In Chicago we don't even know how many cases there are. Our situation is so bad here that if our population remained static and our diagnostic facilities didn't improve it would take 75 years to survey the population. While 15 patients are dying of tuberculosis in Iowa, 45 are dying of the same disease in Illinois. In the last decade or so every state touching Illinois except Kentucky has a better record as regards a decline in mortality rate and in the incidence of the disease than has Illinois. The mortality rate for the nation as a whole has fallen something like 35% over the last 10 to 15 years. In Chicago it has fallen only 10%. Tuberculosis kills a white man in five years and a colored man in three. Five people die every day in Cook County, and approximately the same number downstate.

If the victim of tuberculosis were willing to go to bed where he could get himself cured, at least in the early stage, we have no place to put him. We lack 3,000 beds in Chicago alone, and many hundreds downstate. The states spend on an average nationwide basis about $309 per year per tuberculosis death; Illinois spends 42c. Among cities of more than 100,000 population, Chicago stands 67th in regard to its efficiency in handling tuberculosis. Nevada and Illinois are the only two states in the Union that do not have state owned and operated tuberculosis sanatoria.

MOTION: (English-Berghoff) that when any county assesses the maximum tax load and is still unable to meet the necessary requirements for care of tubercular patients, that they be given the assistance they need by the state, and that such a program be suggested to the legislative committee for whatever action is necessary. Motion carried.

Committee on Arrangements

H. Kenneth Scatliff, as chairman of the Committee on arrangements stated that the chairmen of the various local committees had been selected. Now the personnel of these committees is being filled in with the help of the Advisory Committee of the Council. The Committee on Arrangements will be composed of Drs. J. J. Moore, Fred Muller, Oscar Hawkinson, J. P. Simonds, Frank Maple, J. H. Hutton, C. H. Phifer, R. H. Hayes, M. T. MacEarchern and H. M. Hedge. Scatliff has been in touch with Van Dellen in order to

coordinate activities, and in a short time a meeting will be held with the Advisory Committee.

MOTION: (Berghoff-Neece) that the report be accepted. Motion carried.

Hospital Situation in Quincy

Stevenson reported that one of the hospitals in Quincy contemplates employing men in the various specialties and branches of medicine. The president of the Illinois Hospital Association is the superintendent of the hospital in question, and plans to place men on a full time salary basis in an outpatient capacity with the ensuing revenue reverting to the hospital. Since this definitely establishes the hospital as "practicing medicine", the situation is becoming acute. The Adams County Society would like to have Council action to concur in the resolution, approved by the A.M.A. House of Delegates in 1934 and reaffirmed in 1936, and incorporated in amendments to the principles of Medical Ethics that same year.

The action on the part of the A.M.A. House was as follows: (as appearing in the Code of Ethics of the A.M.A.):

"It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

MOTION: (Neece-Otrich) that the Council concur in the recommendations of the A.M.A. and a copy of this action be sent to the secretary of Adams County. Motion carried.

Poncher's Report — Pediatric Survey

Dr. Henry Poncher, in charge of the survey of child health in Illinois being conducted by the American Academy of Pediatrics, reported that he appreciated the cooperation given him by the Council and by members of the society throughout the state. At this time he asked for Council approval to establish a pediatric diagnostic clinic as a branch of the University of Illinois, centrally located in the 9th and 10th Districts of the Society in southern Illinois. The results of the Academy survey show this area to be without such service. The branch would be in charge of a man with full professional rank at the University of Illinois, and the station would be of assistance as a training area for rural medical problems. Students from downstate could receive training there which would familiarize them with the situation in this area and also with the problems which arise in rural practice. Both the Councilors, Lane from the Ninth District, and Otrich from the Tenth, have approved the idea. Doctor Otrich stated that the matter met with the approval of many of the county society officers in his District also.

MOTION: (English-Hedge) that the Council approve this proposed plan and that the recommendation be that the branch be centrally located. Motion carried.

MOTION: (Hawkins-Lane) that Rawlins be retained as general counsel for the society for the next year as has been done in the past. Motion carried.

MOTION: (Hamilton-Hedge) that the following members be elected to Emeritus Membership:

J. K. P. Hawks, Bloomington, McLean County
Tully O. Hardesty, Jacksonville, Morgan County

Motion carried.

MOTION: (Coleman-Hughes) that the bills as audited by the Finance Committee be approved. Motion carried.

The Council adjourned at 12:30 p.m.

Respectfully submitted,
HAROLD M. CAMP, M.D., Secretary
By: F.C. Zimmer

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A Pictorial Report of a Post-Graduate Conference will appear in the April issue.

Watch for it.

Industrial Health

Committee On Industrial Health — Jos. H. Chivers, Chm., 836 S. Michigan Ave., Chicago 5, Frank P. Hammond, H. A. Vonachen, R. I. Barickman, C. O. Sappington, Milton H. Kronenberg.

The following article reprinted from the Mississippi Valley Medical Journal, January 1947, *was awarded 3rd prize in the Sixth Annual Essay Contest of the Mississippi Valley Medical Society. Dr. R. T. Johnstone was graduated from the University of Pittsburgh School of Medicine in* 1925 *and limits his practice to internal medicine in Los Angeles, California.*

A BASIC APPROACH TO THE DIAGNOSIS OF THE OCCUPATIONAL DISEASES

RUTHERFORD T. JOHNSTONE, M.D.
LOS ANGELES, CALIFORNIA

"Lack of the systematic personal training in *the methods of recognition of disease* is apt to place us on the level of empires and quacks" wrote the dean of American medicine at a period when medicine was more art than science. Since Osler's day clinical teaching and scientific implements have elevated diagnosis in general medicine to a level of undeniable proficiency. But this same degree of proficiency is not attained when confronted with an occupational illness. In no other phase of medicine is *empiricism* so prevalent.

It is not difficult to assign reasons why this diagnostic inefficiency exists within the profession at large when dealing with an occupational illness. One reason, of course, is the neglect of this subject in the undergraduate and postgraduate teaching courses. But this is far from being an all sufficient excuse. To an almost equal degree faulty diagnosis is due to the marked indifference manifested by the average physician concerning "the disease of workers" (De Morbis Artificum"). This attitude probably stems out of the experience of the immediate past in which only rarely did a patient with an occupational disease cross his doorstep.

Times have changed! It is now inevitable and inescapable that occupational diseases or ellegations of such will present themselves to the general practitioner in increasing incidence. No longer centralized in a few eastern cities, industry has spread to small towns and hamlets across this nation. Even farming is industrialized since the farmer must engage in welding, buffing, or degreasing to maintain his machinery. Since only a few industries employ a plant physician, it is obligatory that every physician be cognizant of and recognize the signs and symptoms of the diseases arising out of man's working environment.

MEDICAL AND OCCUPATIONAL HISTORY

The initial approach to the diagnosis of an occupational disease is not dissimilar to that utilized to diagnose any disease of communal origin, since the noxious industrial substances are capable of affecting any of the internal organs or systems of the body such as the central nervous system, the blood or blood-forming organs, the lungs, kidneys, liver, and occasionally — though rarely — the heart. Not only should the general medical history be meticulously elicited, but the occupational history must include each activity engaged in by the patient since his school days. Unless this history is all inclusive, erroneous assumptions will be frequent.

To illustrate, from a patient whose signs and symptoms suggested asthma, a physician obtained the history that the patient had been a baker for the past four years, and prior to that an apartment house manager. His X-ray films disclosed

moderately diffuse fibrosis of the lungs. In reporting the case to the employer, the physician correctly stated that the workman had an asthma due to a sensitivity to flour dust, but incorrectly stated that the fibrosis was due to the inhalation of this dust. He committed these errors: (1) Flour dust produces no perceptible fibrosis of the pulmonary tissue, and (2) the occuaptional history was inadequate. Had he delved further into the patient's occupational history he would have found that many years previously the patient had been a gold miner and as such was exposed to free silica, which had produced the fibrosis noted on the X-ray films.

Then there is the case of a workman whose marital status was rendered temporarily stormy when, during his examination it was noted that he had a perforated septum. In the presence of the wife the patient was advised to have a Wasserman test, the intimation being that the perforation might be due to syphilis. The truth was that the perforation had its inception sometime previously when the patient as an electroplater had been exposed to chromic acid, a fairly common cause of nasal perforation.

Nor should a workman's statement of his occupation be accepted as being descriptive of his industrial exposure. Workmen are prone to classify themselves by a title which does not reveal the actual nature of their work. Indeed, they are rarely cognizant of the materials utilized in the processes in which they are engaged. Also, unless a physician is thoroughly acquainted with the various industrial processes, the occupational title of a job may not convey to him the possible hazards existing in any given occupation.

An electroplater, for instance, may be exposed to one or more of some twenty-two chemicals such as arsenic, antimony, benzine, benzol, cadmium, carbon disulfide, carbon tetrachloride, chromium, cyanogen compounds, hydrochloric acid, hydrofluoric acid, sulfuric acid, lead, mercury, and so on. Except for possibly some minor traumatic injury, there exists no hazard in the ordinary operation of a turret lathe. For several years a Los Angeles plant had been operating turret lathes without any apparent harm to the health of the operators. A sudden wave of illness among these workmen puzzled the management until it was pointed out to them that they had introduced a technique for precision work which involved the use of carbon tetrachloride, the toxic properties of which they were not aware. If one suspected that an illness in a molder or caster was the result of his occupational exposure, he should not concern himself too greatly with the metals for usually these are inert and cause no systemic reaction, but rather he should inquire as to the nature of the flux being used. A welder may be exposed to the fumes of lead, or a combination of metallic oxides (Metal Fume Fever), to nitrous fumes, or to carbon monoxide. The cause of a dermatitis in a pipe fitter was not apparent until it was learned that he had been repairing a leak in a pipe which conveyed acrolein, a known skin irritant.

To assume that a workman has an occupational illness is empiricism; to prove it is a scientific procedure. To do so often requires as much leg work as brain work. He who would learn the cause of occupational ill health must get up off his—er, shall we say—comfortable office chair, cross the tracks, or go across town to the plant to investigate the working environment of his patient. In general medicine, the hospital ward is the class room from whence comes much of our clinical knowledge; in industrial medicine, it *should be the plant.*

As an example of how easy it is to be misinformed, the author, in attempting to determine the cause of an anemia in a patient, telephoned the owner of a small war industry only to be assured that the process in which the workman was engaged used no benzol but rather a petroleum distillate. Not satisfied as to the accuracy of this information, a trip to the plant disclosed that the suspected substance was a so-called thinner bearing a trade number but the label did not disclose the nature of the ingredients. From the manufacturer it was learned that this solvent contained 40 per cent benzol. In this instance the employer had not been aware of the substitution which the superintendent had made several months previously.

Likewise, the failure to obtain accurate knowledge regarding the nature of a patient's exposure will often render treatment useless or even harmful. A physician practicing in the neighborhood of a plastic plant was at loss to explain why some mild cases of dermatitis became aggravated following the application of calomine lotion, and why further aggravation occurred when he

switched to a soothing ointment containing menthol. Had he taken a few minutes from his routine and a few steps to this plant he would have learned that the offending agent in the plastic process was phenol, a coal tar product; having learned this he would not have added insult to injury by prescribing medication also containing coal tar derivatives.

Having secured a good occupational history and having isolated or ferreted out the substance which might possibly be the cause of the ill health in a given case, one must then subject his suspicion to the following type of injury:

1. *Is the suspected substance known to have noxious properties, or is it known to be relatively inert? Is it capable of being absorbed?*

Many substances as they are normally handled in industry are harmless. This truth particularly applies to most metals or alloys as they exist in a so-called "cold state". In such a state cadmium incorporated in an automobile bearing would never cause any harm, but if that bearing was subjected to intense heat and the oxides were liberated, cadmium could not only be toxic but even lethal. This is also true of lead or beryllium. The toxicity of many solvents is increased by heating. With few exceptions the industrial dusts such as textile dust, or dust from flour, wood, feathers, etc., are harmless since they either fail to pass through the protective mechanism of the upper respiratory tract, or if they do so, contain no property capable of producing any pulmonary reaction. It is well known that men exposed to cement dust over a period of twenty or thirty years reveal only minimal, nondisabling fibrosos. Yet under the same working conditions such negligible reaction could not be expected of a dust containing free silica. The toxicity of the solvents varies greatly; the toxic potentialities of gasoline cannot be compared with those of benzol.

2. *To what degree can a suspected substance be absorbed? How rapidly may it be eliminated.*

Since industrial intoxication rarely occurs from ingestion or absorption through the skin, these routes will be ignored and attention focused upon the inhalation of gasses or vapors. According to Henderson and Haggard, "There are two obvious general facts in regard to the absorption of any volatile substance through the lungs: (1) No more of the substance can be absorbed than is taken into the lungs in the air breathed; and (2) absorption ceases when an equilibrium is reached between the amounts in the body and in the air. At the commencement of inhalation of any gas or vapor, that portion which is taken up by the blood is carried in the arterial stream to the capillaries where exchange of the gas or vapor takes place by diffusion between the blood and the tissues. Here, as in the lungs, a nearly complete equilibrium is reached almost instantaneously. The venous blood, therefore, leaves the tissues with a concentration of gas or vapor practically identical with that developed in the tissues through which it has passed. The blood, with a reduced amount of the gas or vapor then returns to the lungs, where it is again brought into equilibrium with the concentration of the gas or vapor in the lungs. As the process continues a state of saturation or equilibrium is reached, at which time all further absorption ceases."

To illustrate the action of the law of saturation the equilibrium, Henderson and Haggard state that the pulmonary ventilation of a man of average size performing work requiring moderate exertion may be taken as 8 liters per minute, or, in round numbers, 4,000 liters in an 8 hour working day. If the air breathed contains 1 mg. per liter of some volatile substance the amount brought to his lungs and hence the maximum amount that can be absorbed, is 4 g. The saturation or equilibrium value for any gas or vapor — that is, the maximum amount that can be absorbed at any concentration — is determined as the product of the weight of the body, the concentration of the gas or vapor in the lungs, and its coefficient of solubility. Assume that a man weighing 70 kg. breathes an atmosphere containing either vapor, the coefficient of solubility of which is 15. The saturation value for such a man breathing an atmosphere containing 1 mg. of ether vapor per liter of air would be 1.05 g. He could not accumulate a greater amount in any length of exposure, no matter how long.

Likewise, elimination follows a similiar established law the same as does absorption. At the termination of absorption, elimination begins and part of the air in the lungs is replaced by fresh air, a part of the gas is carried away in the expired air, and the concentration of the gas in the arterial blood leaving the lungs to reach the

tissues is reached below that in the venous blood returning to the lungs. The repetition of this process soon brings about complete elimination. In respect to industrial exposure, the time spent away from work is greater than that spent in being exposed, and this non occupaional period is more than adequate to permit complete elimination of a gas or vapor, and consequently none is present in the body at the beginning of the next working period.

The foregoing are the general laws that must apply when considering the factors of absorption and elimination. The rule regarding the accumulation and elimination of vapors or gasses is not applicable to substances whose oxidation products are toxic or to certain reactive substances such as methyl alcohol.

3. *Following an exposure to be given noxious substance, how soon should one expect evidence of an illness?*

With few exceptions, intoxication from an industrial chemical ensues during the period of exposure. Because of the law of elimination, the withdrawal from exposure usually guarantees no subsequent or delayed illness. Silicosis or radium poisoning are notable exceptions. Some reports in the literature suggest the possibility of benzol producing some months or years later an aplastic anemia, a leukemia, or neoplasm, but we need more abundant and reliable confirmation on this point.

Having satisfied himself that the offending agent has been identified and that all of the prerequisites necessary to establish the illness as one of industrial origin have been fulfilled, a physician must then appropriate what organ or system of the body is most likely to be affected. In general medicine the various infections, the dysfunction of certain organs, or the alternation of certain metabolic states produce a fairly constant clinical pattern established by experience, by laboratory findings, and by pathological studies. A similar foundation of facts exists in industrial toxicology. Experience has taught us that from an undue exposure to give industrial substances we can expect a typical reaction. Any variation from the usual picture should induce doubt regarding the occupational origin of the illness.

An acute or undue exposure to vapors or gasses invariably affects the central nervous system. While the degree of intoxication may vary, the duration is usually short and rarely are there any sequelae. An actue intoxication from a few industrial solvents may, if severe, affect several systems. The initial effect from carbon tetrachloride may be to the central nervous system, to be followed soon by nephritis or nepatitis.

In chronic exposure, on the other hand, the central nervous system often escapes involvement but the blood-forming organs are injured; or possibly the peripheral nervous system. It is impossible in this space to detail the individual reactions, but suffice it to state that each substance has its characteristic action with which the physician should acquaint himself.

Obviously then, this predilection of a given chemical for a certain organ of the body suggests where the major emphasis should be placed in the physical examination. But pathological lesions elsewhere caused by this same substance may be missed unless the physical examination is most complete. In carbon tetrachloride poisoning if the investigation was confined to the liver or kidneys and did not consider the fundi or visual fields, amblyopia might not be detected if this infrequent condition were present. A negro who had been dipping small metal parts into a tank of trichlorethylene for eight hours without adequate protection was taken to a physician for treatment of chemical burns of his hands. These were treated and he was discharged to go home without further examination. One-half hour later he was found in a stuporous condition and was arrested for being drunk. His intoxication, however, was due to trichlorethylene, not to alcohol. His physician should have examined him for the possibility of central nervous system irritation.

Blood Examinations

An intelligent laboratory investigation is likewise pursued only if one appreciates the type of systemic reaction which is apt to occur following intoxication from a specific agent. A complete blood count should be done routinely on all patients who have had an exposure, either acute or chronic, to any of the industrial solvents or metals. Here is a great unexplored field which as yet has not attracted sufficient attention by our leading hematologists. It is regrettable that in this paper the author cannot indulge in more detailed consideration of the effect certain indus-

trial agents have upon the blood picture or of the variations which are possible. We know, for instance, that lead when absorbed in sufficient amounts produces a fairly constant type of blood change. In contrast, benzol is capable of causing an enemia which defies standardization.

When the blood is affected by the various industrial chemicals, anemia is the usual result but an erythrocytosis may be seen in the very early stages of some intoxications. Certain investigators have noted an increase in the red cells in early poisoning from benzol, hydrogen. sulfide, sulfur dioxide, nitrogen dioxide, the aromatic hydrocarbons, and a few of the metals. This may be true, but most of us do not see these cases until anemia has set in. The length of exposure, the susceptibility of the workman, and the nature of the agent are all factors in the production of the enemia. Most industrial agents produce a hemolytic type of anemia and we find mentioned in this list methyl chloride, colloidal silver, arseniureted hydrogen, tritnitrotoluene, dinitro-benzol, anilin, amido and nitro compounds of phenol, benzol, poisonous resins, lead, and a few others. There is a tendency on the part of many physicians to attribute anemia to a certain type of exposure, when actually the cause of the anemia may be of unrelated origin. As previously stated, we need more authentic study on this subject.

Leukopenia may be seen in the early stages of benzol poisoning, but it is no longer considered as diagnostic. Radioactive substances likewise affect the white cells, causing a relative lymphocytosis, often to the degree that the normal leucocyte lymphocyte ratio is reversed.

Blood chemistry studies are of value in the study of industrial intoxication. The estimation of lead in the whole blood, especially when combined with estimations of the amount of lead in the urine, serves as significant evidence in mediclegal cases. Since the chlorinated hydrocarbons and the chlorinated naphthalenes may affect the kidneys, liver, or both, estimations of non-protein nitrogen, urea creatine, or bile are important procedures.

Urine

In a few instances of industrial intoxication, the urine is a source of confirmatory evidence. The recovery of lead from the urine is well recognized, as is also that of arsenic. The urine suplyate ratio is of aid in the diagnosis of benzol poisoning, providing it is estimated while the worker is still exposed. The sulphates are conjugated in poisoning by phenol, creosote, and analine.

X-Ray Examinations

The primary importance of the x-ray films in occupational medicine lies in their negative rather than their positive findings. While the majority of industrial toxicants enter the body by inhalation, very few of them leave their footprints upon the pulmonary tissue. It is common for workmen to believe that various exposures have affected their lungs. To dogmatically inform them that the allegew offending agent could not harm the pulmonary tissue is not sufficient. The layman has unlimited faith in the positiveness of the x-ray. If a film reveals no harmful effects they are usually satisfied. Unfortunately, however, x-ray films frequently induce errors in diagnoses. It is pitiful what can be read into pictures of the lungs by an inexperienced physician. A few scattered, calcified nodules are too often interpreted as evidence of a "dust disease", or the pigmentation deposits from such material as inert iron is misconstrued as nodulation due to silica.

X-ray pictures will show necrosis of bone due to phosphorus, sclerosis of bones in fluoride poisoning, and osteoporotic changes due to radium.

Additional laboratory studies are to be utilized in specific instances. Biopsy is of value in studying bone marrow changes due to benzol poisoning; patch testing is used in certain allergic states; bacteriologic and serum agglutination tests are to be restored to in undulant fever, glanders, and anthrax, all of which may be due to occupational exposure. The routine examination of radon in expired air in radium workers is an important procedure. Vital capacity tests and cardiac function tests have been employed in the attempt to estimate the degree of disability in the silicotic.

Plant Data

It is not expected of the average physician, even the average industrial physician, that he have training in industrial hygiene or engineering. It is not expected of him that he is able to use the various apparatus employed to collect dusts or measure the concentration of vapors or

gases. For such specific determinations he has recourse to the Industrial Hygiene Division of the United States Public Health Service or to a number of lay organizations capable of making industrial hygiene surveys. But from his own personal experience the writer can testify that the average physician can learn the primary principles of industrial hygiene. This self-education combines instructive reading with what Bloomfield calls "the reconnaissance survey". Such a survey teaches the advantages of local exhaust systems or of proper individual protective equipment, or of need to isolate certain processes. This knowledge adds to one's clinical acumen.

It cannot be too strongly emphasized that the neophyte in industrial medicine critically analyze all opinions as they exist in the literature and that he carefully weigh the authority of the writer. The occasional case report or the published decision of the court in a medico-legal controversy are frequently devoid of specific evidence or conclusions. This is especially true of the statements found in the literature as it comes to us from continential Europe. The conclusions reached by the writers from these countries constantly amaze us and very frequently do not conform to American experience.

In America, the most damnable influence tending to create confusion and to distort or destroy established occupational disease entitles arises out of the medico-legal controversary. An award for compensation or a denial of a claim is frequently based upon medical testimony unbelievably ludicrius. In such instances the referees of our Industrial Accident Commissions are not usually at fault. In California where the writer is familiar with the circumstances, the referees are conscientious attorneys, graduates of law school, who must have practiced law for three years and must pass an examination to qualify them for the position of a referee. Their awards are based upon the medical testimony submitted to them. It is inevitable that when the medical testimony conflicts, inequitable decisions are certain to be made. Although it is felt certain that our referees may be censored for not always considering the quality of the medical testimony or the experience of the medical witness, much of the fault lies in the inadequate training of the medical profession regarding industrial health. From an untutored profession stems baseless opinion.

Summary

In summary, this paper laments the unjustifiable prevalence of empiricism indulged in by the medical profession when confronted with the diagnosis of a disease apt to arise out of or be due to an industrial environment. It urges that the diagnostic approach to an occupational disease be on a rational and scientific basis. The manner of approach has been described. One fundamental aspect of this approach is the appreciation of the fact that under given conditions as industrial substance has a selective action upon a certain organ or system of the body. The supplementary table illustrate this predilection and should serve to make this paper of practical application for the inexperienced physician.

AROMATIC or BENZENE SERIES

1. Aromatic Hydrocarbons	
Benzol (benzene, toluene, zylene)	Acute exposure — CNS depressant — narcotic. Chronic exposure—marked and varied effect on blood and blood-forming organs.
Phenol	Skin irritant and corrosive. Marked absorption toxic to CNS. Kidneys.
2. Aromatic Amines	CNS irritant, kidneys. Bladder tumors?
3. Aromatic Nitro Compounds	
Nitrobenzene	CNS depressant. Cyanosis.
Nitrotoluene	Anemia.
Trinitro toluene	TNT is a skin irritant.
Tetryl	Blood changes (controversal picture).

4. Naphthalene Derivatives	
Naphthalene	Mild narcotic action. Prolonged exposure affects the eyes.
5. Halogens and Halogen Compounds	
Bromine, chlorine, iodine	Eyes and respiratory tract.
Hydrogen fluoride	Irritant, gastro-intestinal disturbance, disturbance of calcium metabolism.
Hydrogen sulfide	Cell and nerve poisoning. Paralysis of respiratory center.
Nitro derivatives Nitrogen dioxide	Respiratory irritant, pulmonary edema. Methemaglobinemia. Immediate or delayed death.

METALS AND ALLOYS

	Toxic Effects
1. Zinc	Exposure to zinc alone rarely toxic.
2. Copper	Exposure to copper alone not toxic.
3. Brass (zinc and copper alloy)	Chills, fever, leucocytosis, headache lassitude, weakness (Mental Fume Fever). Duration few days. If lead is added in alloying, illness may be more serious and characterized by symptoms and signs of lead intoxication.
4. Lead	Mild intoxication — lassitude, headache, constipation, intestinal colic, mild anemia. Moderate to severe — above signs and symptoms intensified, anemia more pronounced, colic more persistent. Wrist drop or encephalitis rare.
5. Arsenic	Skin — exfoiliation, ulcers of skin and mucous membranes, loss of hair, nails; nausea, vomiting, abdominal cramps, muscular weakness, peripheral neuritis.
6. Mercury	Stomatitis, gingivitis, loose teeth, muscular tremors, psychic and mental changes.
7. Manganese	A neural poisoning. Stolid, mask-like facies, monotonous voice, languor, apathy, increased tendon reflexes, retro-and propulsion, slapping gait.
8. Cadmium	Headache, dizziness, dry throat, cough are initial symptoms. Delayed symptoms are constriction and pain in chest, marked dyspnea. May be fatal (chemical pneumonia).
9. Magnesium	Not-toxic. Subcutaneuos splinters cause gas tumors and necrosis.
10. Beryllium	Non-productive cough, occasionally blood tinged sputum, dyspnea. On x-ray, diffuse bilateral haziness (chemical pneumonia).

THE SOLVENTS

Aliphatic or Petroleum Series

(A Partial List)

	Toxic Effects
1. The Alcohols Methyl, esyl, propyl, butyl, amyl	C. N. S. Mild to severe. Optic neuritis or atrophy. Higher alcohols per se *not dangerous.*
2. Aceates Methyl, ethyl, amyl, butyl (Methyl ethylene glycol acetate) (Ethyl ethylene glycol acetate)	Rarely cause any trouble. Could be respiratory irritants or mild CNS irritant.
3. Acetones: Ketones Acetone (dimethylketone) Methylethyl ketone (butanone) Methlypropyl ketone (pentanone)	Questionable but possible CNS depressant.
4. Aldehydes Formaldehyde, paraldehyde, acrolein	Irritant to eyes, throat, nasal passages, skin Higher concentrations — headache, dizziness, tightness of chest.
5. Glycols Ethylene glycol monoethyl ether (cellosolve) Ethylene glycol monoethyl (methyl cellosolve)	Controversial observations. Anemia, irritant to CNS.
6. Aliphatic Oxides Oxidation of aliphatic acids yield carbon monoxide and carbon dioxide Phosgene — formed from carbon monoxide and chlorine.	Asphyxiant Mild — headache, drowsiness. Moderate — coma. Severe — coma, death.
7. Aliphatic Nitrites HCN	Asphyxiant Coma — death
8. The Chlorinated Hydrocarbons A. Saturated Compounds *Common Name* — *Chemical Name* Methyl chloride — Monochlormethane Carbon tetrachloride — Tetrachlormethane Ethlyene dichloride — Dichlorethane Ethylene trichloride — Trichlorethane Acetylene tetrachloride — Tetrachlorethane B. Unsaturated Compounds Acetylene dichloride — Dichlorethylene Acetylene trichloride — Trichlorethylene Tetrachlorethylene — Tetrachlorethylene Halowax — Chlorinated naphthalenes	Most of these have CNS effects of varying degrees from acute exposure. Some affect kidneys, liver (carbon tetrachloride). Few affect the skin (trichlorethylene, chlorinated naphthalenes) or eyes. Controversial blood effects.
9. Alphatic Sulfur Compound Carbon Disulfide	Marked, varied, and bizarre CNS lesions.
10. *Bromine Compounds of the hydro-carbons* Methyl bromide, ethyl bromide	*Irritation to respiratory tract. Mild to severe* CNS disturbance — invariably not permanent.
11. Mixed Hydrocarbon Gasoline (Benzine)	Rarely source of trouble. Headache, dizziness (naphtha jag).

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

CHAMPAIGN COUNTY

Dr. Sale Honored.—Dr. Leslie O. Sale, Fisher, was honored during a meeting of the Champaign County Medical Society in Urbana, December 11, when he was made a member of the Fifty Year Club of the Illinois State Medical Society. Presentation of the pin signifying the honor was made by Dr. Harlan English, Danville, councilor of the Eighth District. Dr. Sale graduated at Northwestern University Medical School in 1896. During the meeting Dr. Willard L. Veirs, Urbana, was elected president of the county medical society, Dr. James D. McKinney, Champaign, vice president, and Dr. Cesare Gianturco, Urbana, secretary-treasurer. Dr. William H. Schowengardt, Champaign, was named delegate to the annual session of the state medical society.

COOK COUNTY

Activities of Institute of Medicine.—Dr. Joseph L. Baer was recently elected president of the Institute of Medicine of Chicago. Other officers are Drs. William H. Welker, vice president, George H. Coleman, secretary, and Grant H. Laing, treasurer. Dr. William F. Petersen is chairman of the board of governors. Dr. Baer and Drs. Warren H. Cole and LeRoy H. Sloan were elected governors for terms of five years. Drs. Stanley Gibson and J. Roscoe Miller, dean, Northwestern University Medical School, were elected to the unexpired terms of Drs. Ludvig Hektoen and James B. Herrick, who because of age have resigned as members of the board after thirty-one years of continuous and exceptional service.

Lectureship Named for Henry Irish.—Dr. Tom D. Spies, University of Cincinnati College of Medicine, Cincinnati, will deliver the first annual Henry E. Irish Lectureship at the University of Illinois School of Medicine, Chicago, April 18, at 5 p.m., in Room 221. His subject will be "Modern Research in Nutrition." The lectureship is sponsored by Eta Chapter of Alpha Kappa Kappa medical fraternity in honor of the late Dr. Henry E. Irish, a former professor of the University of Illinois College of Medicine and a member of the fraternity. The lectureship will be followed by the annual Tri-Chapter banquet of the three Chicago chapters of the fraternity, at which Dr. Spies will be guest of honor, and Dr. Andrew C. Ivy, vice president, Chicago Colleges, University of Illinois, the principal speaker.

James Callahan Honored.—The Legion of Merit was recently awarded to Lieut. Col. James J. Callahan, M.C., A.U.S., Oak Park, who, as consultant in orthopedic surgery, Fourth Service Command, from June 1944 to August 1945, performed a diversity of tasks. The citation referred especially to the fact that in the face of unprecedented expansion of orthopedic service within the command he formulated and carried into effect the entire program, simultaneously maintaining an exceptionally high standard of treatment for thousands of orthopedic cases. He organized, staffed and secured supplies for brace shops at all general and regional hospitals and supervised training of orthopedic mechanics. He guided experimental work on combat boots at Fort Benning, Georgia, and his services were of inestimable value in determining the correct type of combat boot to be worn by the foot soldier. Dr. Callahan graduated at Loyola University School of Medicine, Chicago, in 1928.

Mayor Heads Ten Million Drive for Mercy Hospital.—Mayor Edward J. Kelly is general chairman of a campaign to raise $10,000,000 to finance a building program for Mercy Hospital, Chicago. In a statement to the press, Dr. Robert S. Berghoff, president of the staff of Mercy Hospital, said the drive for funds would start April 1 when the mayor returns from Palm Springs, Florida. Dr. Berghoff pointed out that the proposed twenty-two structure calls for 1,000 beds. To be erected on a site at Erie and St. Clair streets, the hospital will be developed into one of the greatest research institu-

tions of its kind in this part of the country. The project will include an eye-bank to cost $100,000 and which will make available corneas for transplanting on blind human beings throughout the country. It will also include a large orthopedic wing of at least 200 beds where treatment and research on poliomyelitis and cancer will be emphasized. Sister Mary Theresa is director of Mercy Hospital.

Housing Project for Medical Staff.—Creation of a two-block "garden cottage" project on Ashland Boulevard, near the Chicago Medical Center on the west side of the city, was proposed January 21 by Dr. Walter H. Theobald, president of the Medical Center Commission. The object would be to provide housing as soon as possible for doctors, nurses and employees of the institutions comprising the medical center. The Medical Center Commission was created to develop a 70-block district on the West Side into a center of medical research, treatment and education.

Tuberculosis Group Takes New Name.—The Chicago-Cook County Committee for the Eradication of Tuberculosis is the new name of the recently formed citizens' group for tuberculosis control. Offices for the organization, which is designed to enlist support for legislative and administrative action to increase facilities for treatment of tuberculosis, are located in the headquarters of the Tuberculosis Institute of Chicago and Cook County, 343 South Dearborn Street.

Mark Goldstine Honored.—A bronze plaque was unveiled during the special cermonies in the Wesley Memorial Hospital, January 25, to honor the many years of service of Dr. Mark T. Goldstine to the hospital. The physician, who graduated at Rush Medical College in 1900, joined the staff of the Wesley Hospital in 1902, serving as assistant in obstetrics and gynecology. He was chairman of the department from 1912 to 1944 when he became chairman emeritus. Dr. Goldstine is also professor emeritus of obstetrics and gynecology at Northwestern University Medical School, having been affiliated with the school since 1911.

Victor Johnson Goes to Mayo Foundation.—Dr. Victor Johnson, professorial lecturer in physiology, University of Chicago School of Medicine and since 1943 Secretary of the Council on Medical Education and Hospitals of the American Medical Association, has resigned to become director of the Mayo Foundation for Medical Education and Research. He succeeds Dr. Donald C. Balfour who will continue as director emeritus and professor of surgery in the Graduate School of the University of Minnesota School of Medicine. Dr. Johnson will join the staff of the Mayo Foundation as professor of physiology, effective April 1, and will become director of the Foundation in October. Dr. Johnson graduated at the University of Chicago School of Medicine in 1939. He will continue as a member of the Council on Medical Education and Hospitals, having recently been elected to succeed Dr. Ray Lyman Wilbur.

Society News.—Dr. Alvan L. Barach, New York, addressed a meeting of the Chicago Tuberculosis Society and the Tuberculosis Institute of Chicago and Cook County, January 31, on "Physiologic Therapy in Respiratory Disease with Special Reference to Recent Developments in the Treatment of Pulmonary Tuberculosis and Pulmonary Emphysema." The discussion was carried on by Drs. John S. Gray, professor of physiology, Northwestern University Medical School, and Dr. Andrew C. Ivy, Vice President, Chicago Professional Colleges, University of Illinois. — Dr. John P. O'Neil, Second Vice President of the Illinois State Medical Society, Chicago, was the principal speaker at the fifty-first annual meeting of the Norwegian Old People's Home, Norwood Park, January 17. The title of his address was "The Sunset of Life and Its Relation to Chronic Illness."

Hospital News.—Passavant Memorial Hospital recently received a check for $25,000, the amount representing the first night's receipts of the 1947 Hollywood Ice Review at the Chicago Stadium.

Personal.—Albert Milzer, Ph.D., formerly research virologist of the Samuel Deautch Serum Center, Chicago, has been named director of the department of bacteriology, Michael Reese Hospital, Chicago, to succeed Dr. Katharine M. Howell, who retired Dec. 31, 1946.—Dr. Ernest Klein, who was recently released from military service, has returned to his position as psychiatrist on the staff of the Chicago State Hospital.—Dr. Carl A. Starck, Palatine, has purchased the Kunze Building and expanded his offices.—Dr. James L. Hall, formerly a member of the staff of the Chicago Free Dispensary and Provident Hospital, has resigned as superintendent of the Freedman's Hospital, Washington, D. C., to return to private practice in Chicago.—Dr. Karl Singer, formerly of Boston, has been appointed a member of the staff of the hematology laboratories of Michael Reese Hospital, newspapers reported January 26.—Mr. Fred A. Hertwig on January 2 became warden of the Cook County Hospital, Chicago, succeeding Gen. Manus McCloskey. William N. Erickson, president of the county board, and Dr. Karl A. Meyer, medical superintendent of county institutions, were, among others, present at the installation ceremony. Mr. Hertwig was for many years manager of a hotel in Evanston.

Symposium on Medicolegal Problems. — February 4 marked the opening of a series of lectures on medicolegal problems at the Chicago Bar Association, 29 South La Salle Street, Chicago, under the co-sponsorship of the Institute of Medicine of Chicago, the Chicago Medical Society and the Chicago Bar Association. The series is as follows:

February 4: PSYCHIATRY AND THE CIVIL LAW

Presiding: James F. Oates Jr., President of the Chicago bar

Medical Presentation: Frances J. Gerty M.D., Professor of Psychiatry and Head of the Department, University of Illinois College of Medicine.

Legal Presentation: Honorable Harry M Fisher, Judge of the Circuit Court of Cook County

February 11: PSYCHIATRY AND THE CRIMINAL LAW

Presiding: George F. Lull, M.D., Secretary and General Manager, American Medica Association

Medical Presentation: Paul L. Schroeder M.D., Professor of Criminology and Head of the Institute for Juvenile Research, University of Illinois College of Medicine

Legal Presentation: Wilbert F. Crowley, Esq., First Assistant State's Attorney, Cook County, Illinois

February 18: THE SKELETON SPEAKS MEDICOLEGAL IMPLICATIONS

Presiding: Werner W. Schroeder, Esq., of the Chicago Bar

Medical Presentation: Wilton M. Krogman, Ph.D., Associate Professor of Physical Anthropology, University of Chicago

Legal Presentation: A. R. Peterson, Esq., of the Chicago Bar

February 25: FEDERAL CONTROL OF DRUGS AND COSMETICS

Presiding: Anton J. Carlson, M.D., Frank P Hixon Distinguished Service Professor Emeritus of Physiology, University of Chicago

Medical Presentation: Morris Fishbein, M.D., Editor, The Journal of the American Medical Association

Legal Presentation: Alvin M. Loverbud, Counsel, Food and Drug Division, Federal Security Agency, Washington, D. C.

March 4: RADIATION HAZARDS AND HEALTH PROTECTION RADIOACTIVE RESEARCH

Presiding: Royal W. Irwin, Esq., of the Chicago Bar

Medical presentation: Austin M. Brues, M.D., Professor of Medicine, University of Chicago

Legal Presentation: Augustine J. Bowe, Esq., of the Chicago Bar

DE KALB COUNTY

Society Election.—Dr. John W. Ovitz, Sycamore, was elected president of the De Kalb County Medical Society at its meeting in Sycamore in December, Dr. Paul W. Carney, De Kalb, vice president, and Dr. Grant Suttie, De Kalb, secretary. Dr. Carl E. Clark, Sycamore, was named delegate to the annual meeting of the Illinois State Medical Society in May.

DU PAGE

Society News.—Dr. Margaret Scannell, Chicago discussed "Acute Rhumatic Fever in Children" at a dinner meeting of the Du Page County Medical Society at the Elmhurst Hospital, Elmhurst, February 19.

EFFINGHAM COUNTY

New Officers.—Dr. Peter C. Rumore was recently elected president of the Effingham County Medical Society to succeed Dr. G. R. Marshall, Effingham. Dr. Elijah S. Frazier, Effingham, was named vice president and Dr. William J. Gillesby, Effingham, secretary-treasurer.

JO DAVIESS COUNTY

Personal.—Dr. J. Eric Gustafson, Stockton, was elected president of the Jo Daviess County Tuberculosis Association at its annual meeting in Galena recently. Drs. George C. McGinnis, Warren, and Ray E. Logan, Galena, are among members of the executive committee; Dr. Gustafson was also named a member of the board of directors.

KANE COUNTY

Secretary Elevated to Presidency.—Dr. Krikore M. Manougian, who has served the Kane County Medical Society fifteen years as secretary, was chosen president of the Society at its meeting December 12 in Elgin. Dr. Clarence O. Heimdal was named vice president and Dr. Andrew J. Zmugg secretary-treasurer. Dr. Edward H. Weld, Rockford, past president of the Illinois State Medical Society, was a guest at the meeting.

Personal.—Dr. Emil K. Mosny Chicago is the new physician at St. Charles Training School. He graduated at Loyola University School of Medicine, Chicago, in 1937.—Dr. Ruth Besier, who has served as instructor in pathology at the University of Illinois College of Medicine and instructor in psychiatry and pathology at the Langley Porter Clinic, University of California Medical School, San Francisco, has been named resident in psychiatry at the Elgin State Hospital. Dr. Paul Jenkins, Goshen, Ind., and recently released from service in the army, has been appointed physician on the state hospital staff.

Memorial to Charles Read.—The establishment of the Charles F. Read Memorial Fund has been announced to finance the cost of commissioning an artist to do a portrait of the late Dr. Charles F. Read who from 1930 to his death, March 11, 1946, served as managing officer of the Elgin State Hospital. According to the Welfare Bulletin of the Illinois Department of Public Welfare, the hospital's diagnostic building is to be renamed the "Charles F. Read Diagnostic Center" and his portrait is to be placed in the entrance lobby. A bronze plaque will also be placed on the building. The memorial stemmed from the wish of friends and associates of Dr. Read to commemorate his services to the state. Dr. Read, who had been a past president of the

Chicago Neurological Society and the Illinois Psychiatric Society, also served as state alienist from 1921 to 1925. Anyone wishing to contribute to the memorial fund should communicate with Charles H. Peeler, chief clerk, Elgin State Hospital, who is serving as treasurer of the fund.

KNOX COUNTY

Personal.—Dr. Frank Marion Huff announces the opening of his office at 521 Bondi Building, Galesburg. His practice is limited to urology.

LIVINGSTON COUNTY

President Addresses County Group.—Dr. Robert S. Berghoff, Chicago, of the Illinois State Medical Society, discussed activities of the state society in a preliminary address to his talk on "Coronary Disease" at a meeting of the Livingston County Medical Society in January. Among the discussors were Drs. Edgar M. Stevenson, Bloomington, M. H. Fineberg, clinical director at the Veterans Administration, Dwight, Frank Deneen, Bloomington, and W. A. Kanapel, Dwight. Dr. Edward F. Joss, Dwight, was named as chairman of the county medical society's cancer committee to represent the society in the organization of a county cancer unit.

MACON COUNTY

Society News.—Dr. Drew W. Luten, associate professor of clinical medicine, Washington University School of Medicine, St. Louis, discussed "The Clinical Course of Coronary Disease" before the Macon County Medical Society in Decatur, January 28.

Installation of President Delayed.—Due to highway conditions and an automobile beyond his control, Dr. Forrest Martin was unable to attend his inauguration as president of the Macon County Medical Society at its first 1947 meeting, January 3, at the Decatur Club. According to the Macon County Medical Society *Bulletin,* President-Elect Fred Ferguson was also unavoidably detained and the chair was retained by Retiring President Stanton G. Smith.

PEORIA COUNTY

New Tuberculosis Superintendent.—Dr. George D. Morse, formerly of Columbus, Ohio, has been named medical director and superintendent of the Peoria Municipal Tuberculosis Sanitarium. He succeeds Dr. Maxim Pollak who recently resigned to engage in private practice. With new offices at 735 Jefferson Building, Peoria 2, Dr. Pollak's practice is limited to diseases of the chest.

Society News.—Dr. Willis J. Potts, chief of surgery, Children's Memorial Hospital, Chicago, discussed "Surgery of Congenital Heart Lesions" before the Peoria Medical Society, January 21.

ROCK ISLAND COUNTY

New Officers.—Dr. Joseph K. Hanson, Moline, was elected president of the Rock Island County Medical Society at a meeting in Moline, December 10, succeeding Dr. Roland O. Sala, Rock Island. Other officers include Drs. Elliott F. Parker, Moline, and Robert B. Collins, Rock Island, vice presidents; Joseph G. Gustafson, Moline, secretary, and Phebe L. Pearsall-Block, Moline, treasurer.

ST. CLAIR COUNTY

Hospital News.—Dr. Walter C. Wilhelmj, East St. Louis, was elected chief of staff of St. Mary's Hospital at the staff's twenty-fifth anniversary meeting, December 16. Dr. John F. Brennan, East St. Louis is secretary.

Society Chooses New Officers.—Dr. Herbert P. Dexheimer, O'Fallon, was chosen president-elect of the Belleville branch of the St. Clair County Medical Society at its meeting in December. Dr. Cecil L. Martin, Belleville, is the new president. Other officers include Drs. Rudolph C. Heiligenstein and Howard L. Lange, both of Belleville, vice president and treasurer, respectively. Dr. Edward G. Dewein, Freeburg, was named a member of the board of censors of the Belleville branch. Dr. Irvin W. Davis was elected secretary to succeed Dr. Grover C. Otrich who declined being reelected to a position he had held for twenty-three years.

WHITESIDE COUNTY

Clinic for Physically Handicapped Children.—Sixty-one patients attended the clinic for physically handicapped children at the Public Hospital, Sterling, January 15. According to press reports, this was the largest clinic ever held in Sterling. The clinic was conducted by local physicians and nurses.

WILL-GRUNDY COUNTY

Society News.—"Present Day Management of the Septic Types of Meningitis" was the title of an address by Dr. Harry Leichenger, Chicago, before the Will-Grundy County Medical Society in Joliet, February 27.

WINNEBAGO

Proposed Mental Hygiene Clinic.—Members of the Winnebago County Medical Society on January 10 endorsed a plan for establishment of a mental hygiene clinic in Rockford. The Rockford *Star* said the society had appropriated an undisclosed sum of money for the project. At the meeting Dr. Paul E. Dee, Rockford, gave an illustrated talk on "Traumatic Surgery of the Hip Joint."

GENERAL

Personal.—Dr. Edward A. Oliver, professor of dermatology, Northwestern University Medical School, Chicago, was recently elected president of the American Academy of Dermatology and Syphilology.—Dr. John I Brewer, Chicago, is secretary-treasurer of the Central Association of Obstetricians and Gynecologists.

Released from Service.—Physicians recently released from military service include the following: Lowell E. Kannapel, Peoria; John A. Raich, Dwight; James T. Rankin, Rockford; Gregory J. White, Oak Park; and Peter Vanikiotis and Harold E. Young, Jr., both of Chicago.

Trudeau Society Chooses New Officers.—Dr. Charles Petter, medical director of the Lake County Tuberculosis Sanatorium, was installed as president of the Illinois Trudeau Society at its annual meeting recently, succeeding Dr. David F. Loewen, Decatur. Other officers include Drs. Kenneth Bulley, Aurora, president-elect; Arthur Webb, Glen Ellyn, vice president, and L. L. Collins, Edwardsville. Dr. George C. Turner, Chicago, and Dr. Loewen were elected to the executive committee.

Cancer Symposium.—Thirty-four physicians, representing various county medical societies in downstate Illinois attended a symposium on cancer, January 20-24, held under the auspices of the Illinois Division of the American Cancer Society. Lectures, conferences and clinics were held at the University of Illinois, University of Chicago, Northwestern University, Loyola University, Michael Reese and Mercy hospitals. The symposium was part of the program of professional education sponsored by the American Cancer Society and was arranged by Drs. Warren H. Cole, University of Illinois College of Medicine; Alexander Brunschwig, University of Chicago School of Medicine; Loyal Davis, Northwestern University Medical School; Herbert E. Schmitz, Loyola University School of Medicine, and John A. Rogers, executive director of the Illinois Division of the American Cancer Society. At one dinner session in the Illini Union the speakers were Mr. Bertram J. Cahn, president and chairman, board of directors, Illinois Division, American Cancer Society, and Dr. Harold M. Camp, secretary, Illinois State Medical Society. Another dinner session at Mercy Hospital was addressed by Drs. Eric Uhlmann, director, Tumor Clinic, Mercy Hospital, Dr. George F. Lull, Secretary and General Manager, American Medical Association, and Dr. Schmitz.

Obstetricians and Gynecologists Form Society.—As part of the activity of the Maternal Welfare Committee of the Illinois State Medical Society, it was thought desirable to form an Obstetrical and Gynecological Society devoted particularly to the interest of the men in the down state area whose chief interest lay in these specialities. A preliminary meeting was held in St. Louis in September but the organization meeting was held in Springfield January 12. Men who had indicated their interest in the formation of such a Society were invited by members of the Maternal Welfare Committee from the various Councilor districts. Approximately 10 men from each district were invited.

At this meeting a Constitution and By-laws were adopted and various committees were appointed to complete the organization of the Society. The next meeting is planned for May 11 in Chicago which is the Sunday preceeding the state meeting.

It is hoped that this Society will provide a forum for the discussion of problems of maternal welfare, and promote better fellowship and co-operation between the members of the Medical Society who are devoting most of their time to the solution of these problems.

Officers chosen at the January meeting include Dr. Frederick H. Falls, Chicago, president and Gilbert H. Edwards, Pinckneyville, secretary.

Postwar "Flu" Epidemic Anticipated.—A postwar "flu" epidemic, similar to the one that followed World War I, was anticipated by Dr. Edward A. Piszczek, director of the Cook County Department of Health in a statement to the press, February 3. Pointing out that a dry fall and mild winter may have forestalled the epidemic this year, Dr. Piszczek said it was the opinion of public health officials that a reoccurrence of the 1918-1919 outbreak was inevitable. Indications are, however, that the next "flu" epidemic will not be as deadly as the last one, which took more than 548,000 lives in the United States. New vaccines not only build up immunity in individuals, it was stated, but also reduced the virulence of the disease as it is passed on to others. More than 1,000 county employees and 1,600 children in boarding schools and orphanges have been given vaccine by the county health department.

Six Counties Meet for Scientific Session.—Dr. Nathan A. Womack, East St. Louis, addressed a joint meeting, January 30, of six county medical societies that met together for the first time. His subject was "A Consideration of Common Lesions of the Breast." The organization had been composed heretofore with the county medical societies of Jackson, Union, Williamson, Randolph and Perry. With the January 30 meeting, the Franklin County Medical Society entered the group. The organization itself has no officers. Once a month one of the societies invites the other five counties to join them in a scientific program, each county taking its turn as host and each of the six counties being host twice a year. The secretary of the host county supervises the arrangement and serves somewhat as master of ceremonies, the meetings being rotated to some place within the host county.

DEATHS

CLIFTON LEROY BELDING, Itasca, who graduated at Northwestern University Medical School, Chicago, in 1911, died Nov. 11, 1946, aged 61, of coronory thrombosis. Dr. Belding was on the staff of Bethany Home Hospital and formerly served as professor of ophthalmology at the Illinois Post-Graduate Medical School in Chicago.

MAYER S. COFFLER, Chicago, who graduated at the University of Illinois College of Medicine in 1913, died in the Mount Sinai Hospital, Chicago, Oct. 16, 1946, aged 59, of hypernephroma of the left kidney.

GRACE DEWEY, Jacksonville, who graduated at Johns Hopkins University School of Medicine, Baltimore, in 1903, died Nov. 24, 1946, in Passavant Memorial Hospital, Chicago, aged 83, of heart disease. Dr. Dewey had been secretary of the first board of trustees

of the Morgan County Tuberculosis League. She was the first woman trustee of Illinois College where she was a member of the board at the time of her death.

FRANK C. FISHER, Bloomington, who graduated at the University of Illinois College of Medicine in 1903, died January 25, aged 78. He was an emeritus member of the Illinois State Medical Society.

WALTER COLFAX LOVEJOY, Maywood, who graduated at the Chicago Homeopathic Medical College, Chicago, in 1891, died January 15, in the Westlake Hospital, Melrose Park, where he had been chief of obstetrics since 1930. Dr. Lovejoy, who was 79 years of age and a member of the Illinois State Medical Society, was formerly president of the Aux Plaines Branch of the Chicago Medical Society. He died of coronary thrombosis.

THOMAS P. LYMAN, Chicago, who graduated at Rush Medical College in 1900, died January 11, aged 80.

THOMAS C. MCGONAGLE, Chicago, who graduated at Northwestern University Medical School in 1898, died at his home January 31, aged 79. He was a member of the staff of Evangelical Hospital.

MATHIAS JOSEPH SEIFERT, Chicago, who graduated at the University of Illinois College of Medicine in 1901, died February 1 in Columbus Hospital, aged 80. Dr. Seifert, who was an emeritus member of the Chicago Medical Society, was chief of staff at Columbus Hospital and for many years had been a member of the teaching staff of the University of Illinois College of Medicine.

THOMAS GORDON TIBBY, Oakdale, who graduated at Rush Medical College, Chicago, in 1894, died in the Sutherland Hospital, Sparta, October 16, 1946, aged 75, of shock and brain concussion received when he fell down stairs.

EDWARD PATRICK TROY, Chicago, who graduated at Northwestern University Medical School in 1914, died Dec. 11, 1946, aged 59, of cerebral hemorrhage. He had been a member of the staff of the City of Chicago Municipal Tuberculosis Sanatorium since 1916, serving as superintendent of dispensary service for many years.

JOHN CARROLL WALTERS, Springfield, who graduated at St. Louis University Medical School in 1896, died in Miami, Fla, Dec. 29, 1946, aged 74. He was an honorary member of the Sangamon County Medical Society, which he had served as president in 1934-1935.

FRANK A. WILEY, Earlville, who graduated at Rush Medical College in 1888, died January 8, aged 80. He was a member of the Fifty Year Club of the Illinois State Medical Society, holding also an emeritus membership in the society.

EXPLODE MYTH THAT NEGRO IS IMMUNE TO STONES IN URINARY TRACT

Exploding the myth that the American Negro is immune to stones in the urinary tract, two Richmond, Va., physicians state that "whatever natural immunity the Negro may have is certainly modified by his mode of living and the frequent occurrence of infection in the urinary tract."

Writing in *The Journal of the American Medical Association,* Austin I. Dodson, M.D., and John R. Clark, M.D., from the urological service of the Hospital Division of the Medical College of Virginia, say:

"The frequency with which we encounter calculi of the urinary tract on the wards of the Hospital Division of the Medical College of Virginia convinces us that although urolithiasis may occur less frequently in the Negro than in the white race, it is by no means uncommon. Furthermore, we have observed that stones in the Negro are more frequently accompanied with infection and are far more destructive to renal tissue than those in white patients. The fact that Negroes are more reluctant to seek medical aid and depend more on home remedies than do white people certainly contributes to some extent to high morbidity and morality as a result of stone. The same thing doubtless contributes to the fact that calculi are less frequently found among them."

During the 10 year period from 1935 until 1946 there were 2,724 white patients and 1,800 Negro patients admitted to the urological service of the hospital, according to Drs. Dodson and Clark. Of these, 637 white patients and 121 Negro patients had stones in the urinary tract.

The doctors point out that the treatment of Negroes varies considerably from that usually considered advisable for white patients. The percentage of kidney removals is extremely high. Of 62 Negro patients with stone in the kidney, 20 had the kidney removed, while only 26 of 190 white patients were treated with such radical measures. The authors explain this by stating that "because of the difficulty in getting these patients to return for adequate follow-up treatment, more radical surgery usually is required than is necessary in the white patient."

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